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THE SIGHT-SAVING REVIEW



SPRING, 1961

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THE SIGHT-SAVING REVIEW

Official quarterly of the

NATIONAL SOCIETY FOR THE PREVENTION OF BLINDNESS, INC.

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Member of the National Health Council

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OREGON CONFERENCE ON VISION CONSERVATION

Authorities representing all professions concerned with eye health and prevention of sight impairment attended this state-sponsored meeting in October 1960.

OF UNUSUAL interest and significance was Oregon's first state-wide conference on conservation of vision held at the Benson Hotel, Portland, October 24-26, 1960. Sponsored by the Oregon State Board of Health in cooperation with state and national agencies, it was attended by professional personnel from the fields of medicine; optometry and opticianry; general and health education; nursing and social welfare. One hundred fifty-three of these participants were from Oregon; five were out-of-state resource specialists.

The objective of the conference was to provide an opportunity for discussion of current vision conservation needs, resources, and activities by representatives of various agencies; and to determine ways and means of increasing integration of such activities in the public health and education programs throughout the state.

A summary of the events of the three days and a digest of a number of the conference papers are presented in this issue of *Sight-Saving Review* in the belief that they will be of interest to many authorities in other states who are concerned with similar problems.

The discussions centered on six major themes: community organization for vision conservation; medical care for the prevention of blindness;

ways and means of assisting the visually handicapped; agency responsibilities for the blind; eye problems of children and the aging; and social and cultural factors affecting vision conservation programs. Plenary sessions gave opportunities for informal, free discussion.

State Organization

Welcoming the delegates on the opening day of the meeting, Joseph L. Taylor, director of health education, Oregon State Board of Health, outlined the development of activities in the state which led to the organization in 1949 of the Board's Vision Conservation Section. In 1953 the section received some assistance from the Kellogg Foundation for work in blindness prevention, and in 1957 the state assumed full responsibility for this program.

"The activities of this section have been continually evaluated," Mr. Taylor said, "and in 1959, after conferences with educational and technical staff, there occurred a shift in the emphasis toward education of wider scope, stressing educational and community organizational aspects of vision conservation.

"We now have a state-wide committee with broad representation including official, unofficial and vol-

untary agencies. This is significant and is receiving attention nationwide.

"One thing is common to all activities in preventive medicine and public health—and that is health education. We are promoting eye health education and the prevention of sight impairment through this conference of authorities from all professions engaged in vision conservation."

Conference Co-operators

At the conclusion of his opening remarks Mr. Taylor introduced the representatives of the conference co-sponsors: Dr. Gerhard B. Haugen, Oregon State Board of Health; Dr. Raymond Hofstra, program services chief, U.S. Public Health Service; Dr. Robert E. Fischer, Oregon Academy of Ophthalmology and Otolaryngology; Leonard Forsgren, president, Portland Junior Chamber of Commerce; and Dr. John W. Ferree, executive director, National Society for the Prevention of Blindness.

Dr. Milton Singer, chairman of the Vision Conservation Section's advisory committee, paid tribute to the expert guidance of Robert Bogue, section administrator, in assembling as advisers representatives of 13 official and private agencies. Previously, he said, there had been a minimum of liaison among these multiple groups concerned with eye health, and no clearing house where the individually sponsored programs could be brought up for recognition and discussion. The advisory committee which first met about a year ago has considered various projects, planned or under way. The exchange of ideas has resulted in a broader concept of the needs in Oregon.

Community Activities

Following Dr. Ferree's keynote address at this morning session (a digest appears in this issue) the delegates assembled for a round table luncheon at which Mark Howard, public information officer, Oregon State Board of Health, presided.

At the afternoon session Mrs. Julia Sheldon, director of nursing services, Multnomah County Health Department served as chairman. Dr. Homer E. Smith, executive secretary and treasurer, Pacific Coast Oto-Ophthalmological Society, Salt Lake City, Utah and chairman, professional advisory committee, Utah Society for the Prevention of Blindness, discussed the role of ophthalmology in community activities for vision conservation (paper follows). A panel discussion later was led by seven authorities concerned with eye services.

Mrs. Marvin D. Haight, staff executive, Portland Community Council, a panel member, described the work of this organization which, generally speaking, is to the health, welfare, recreation and education agencies what the Chamber of Commerce is to business. The Council has a membership of 100 organizations ranging from PTA's to county welfare, from Council of Churches to Boy Scouts, and is the only such council in the state with a paid staff. It serves through planning, coordination, research, information and referral. Mrs. Haight referred to a recent study of the community services for the blind made in cooperation with the American Foundation for the Blind. This revealed that the unmet needs of the blind were the same as those of the total population.

Wade Patterson, health educator, Oregon State Board of Health, described the program of the Board's health education section. Assistance is given to local health authorities or community agencies in preparing pamphlets, posters, exhibits, releases, and in working through other communications media. Home safety programs are sponsored, and they include aspects of vision. Mr. Patterson advised the organization of health councils in all counties which do not have them. The groups are of great importance in determining eye conservation needs.

Industrial Eye Injuries

James E. Wiles, director, accident prevention division, Oregon State Industrial Accident Commission, emphasized that a complete eye conservation program in industry includes both correction of visual defects and protection against injury. During Oregon's fiscal year 1959-60 there were 8,382 industrial eye injuries, representing 12.57 per cent of the total reported claims to the Commission.

Safety regulations, Mr. Wiles said, should not be a matter of compulsion; they should be sold to employees through planned programs which include: job study to determine eye hazards and types of protection; first-aid emergency eye care; modern vision testing techniques; minimum visual standards for placement; an effective referral system for correction of visual defects; study of illumination and color factors in visual efficiency; and education in the importance of eye protection and correction of visual defects.

Dr. Jerome Goldman, director,

glaucoma clinic, Devers Eye Clinic of Good Samaritan Hospital, Portland, stated that the most important vision conservation needs in Oregon relate to glaucoma and preschool vision testing. With respect to the former he said that education efforts should be broadened not only for the general public, but probably even more intensively for those concerned with medical care in general and the eyes in particular.

Dr. Goldman referred to the many cases of monocular amblyopia seen in children, a condition which could have been avoided if the eyes had been examined at preschool age. He recommended more facilities for screening Oregon children at the preschool level.

Services for the Blind

Lawrence Burman, director of social and educational services, Oregon Commission for the Blind, outlined the responsibilities of that agency. Its services are available, with certain exceptions, to any person who is determined by an ophthalmological examination to be blind within the definition of blindness, as set forth by the Oregon Commission and the Library of Congress, and who is living in Oregon for other than temporary purposes.

"Services of the Commission," Mr. Burman said, "may range from an eye examination to determine extent and cause of the client's visual handicap to a full range of services beginning with such examination, carrying through to the completion of a graduate training program in a college or university, and placement in a position or the client's own professional offices. No independent client

is automatically eligible for all services nor is he mandatorily restricted to any one or group of services. Each case is treated independently and services are tailored to fit particular needs.

"At the present time the department's Division of Social and Educational Services is utilizing its personnel to provide teaching services within the educational institutions of the state for individual students. These services are not available elsewhere and it is felt that the provision of such training will make the young persons involved better prospects for the Division of Vocational Rehabilitation. That particular division is always concerned with every age group and the development of the following skills and techniques: orientation and adjustment to blindness, Braille and typing, crafts, mobility instruction, talking-book service, maintenance of the registry of blind persons throughout the state, and the development of organized classes in local areas to promulgate skills and abilities."

Neglected Cases

Mr. Burman cited certain problem areas that should receive the attention of the conference.

"There is a serious gap," he said, "in the provision of services for those individuals who lie somewhat in the middle ground between the sighted and the industrially blind. What I mean by industrial blindness is that definition of blindness which seems to prevail throughout the country and is the boundary which separates the so-called blind from the seriously visually handicapped. Eye conditions ranging in this middle ground may be

incapacitating and result in occupational, recreational and psychological handicaps which do not seem to fall within the jurisdiction of any existing organization or agency. Other agencies consider these people non-feasible for services in spite of the fact that many totally blind people are successfully rehabilitated. I feel that research and constructive effort will result in a strong indication that a need exists and the possible solution to the problems therein.

"Secondly, I feel that the educational institutions throughout the state need to be made more aware of the difficulties in communication for the seriously visually handicapped child. Whereas he may be able to profit from large print materials in school, he is going to find few such materials available when he enters the sighted working world. We need more instructors, perhaps on an itinerant basis as utilized in the Portland public schools, to teach Braille and typing throughout the state and we need school personnel who recognize the limitations imposed upon seriously visually handicapped children not only in an academic situation but in the inevitable vocational situation in which they will find themselves in the future."

Role of the Schools

Ralph J. Dyson, consultant in health and physical education, Oregon State Department of Education, expressed his interest in getting from the conference all possible information in relation to the health of the total child. Obviously the schools play a major role in the vision conservation program. Mr. Dyson referred particularly to vision screening as performed

in Oregon with the Snellen test as "one of the most valid tests that we have."

Carl Shaw, director, Friendly House Community Center, Portland emphasized his belief that specialization has made it difficult for the layman to get proper eye care.

"Except by amputation," he said, "man is indivisible; yet there flourishes today a multitude of organizations devoted exclusively to various but specific subsections of the human body. This intentional segmentation and specialization has produced great advances in the prevention and treatment of many of man's ailments. It also, however, has thrown road blocks in the path of the layman who seeks proper care. Partially this is because of the increased cost, but more particularly because he must continually assume even higher degrees of responsibility for self-diagnosis if he is to profit from specialized services."

Mr. Shaw recommended better lines of communication and mutual trust and understanding between the various eye specialists, as well as those whose function it is to see a man as a whole person.

Advances in Treatment

Progress in ophthalmology was the subject for discussion at the morning session on the second day of the conference, with Dr. Kenneth C. Swan, professor of ophthalmology, University of Oregon Medical School, as chairman. Dr. Robert P. Burns, and Dr. Leonard Christensen, both associate professors of ophthalmology at the Medical School presented papers on advances in treatment of eye diseases, and on tissue transplants in eye disease respectively. Dr. Milton

Singer reported on experience in management of industrial eye accidents, and Dr. Robert E. Fischer discussed corneal lenses, low vision aids and prosthetic devices. Dr. Swan summarizes these papers in this issue.

Problems of the Visually Handicapped

Following luncheon, at which Dr. Joseph Moreland, ophthalmologist of Salem, presided, the conference members assembled for the afternoon's discussion of problems of the visually handicapped. The papers of Chairman Carl Ashley, M.D., director of maternal and child health, Oregon State Board of Health; Walter R. Dry, former director, Oregon State School for the Blind; Madge Leslie, consultant for visually handicapped children, Portland Public Schools; and Raymond S. Myers, consultant, Oregon State School for the Blind appear in this issue. A fourth speaker at this session was Dan Mercer, chairman, Oregon Commission for the Blind, who outlined the Commission's responsibility to children between the ages of 16 and 21.

Older Age Groups

On the third and final conference day, October 26, Dr. Clifford Anderson, director, Washington County Health Department, served as chairman of the morning session which was devoted to eye problems of older age groups. In his introductory remarks he emphasized that "medicine has created a dilemma." The greater the achievement and progress at the lower end of life's spectrum, he said, the greater the problems at the other end.

In 1900 there were three million people in the United States over age

65, equivalent to four per cent of the population. Today there are some 15 million, about nine per cent of the population; and by 1975 there will be some 25 million, or 13 per cent. It can be seen that while the population as a whole is increasing, the percentage of people over 65 in the total is increasing also. The chief reasons for this are the prevention and control of infectious diseases and the dwindling birth and immigration rates. The birth rate was 30 per 1,000 population in 1900; 18 per 1,000 in 1933; and at present is 25 per 1,000. Many diseases that formerly decimated our population are nonexistent now, and the effects of others have been lessened.

Commenting on the extensive efforts throughout the country to organize community programs for the older age groups Dr. Anderson said we might well ask the question: "Is it all worth while?" The answer is yes, he said. According to 1951 estimates individuals at 65 have sufficient life expectancy to make long-range plans: white males, 13.0 years; white females, 15.4.

Glaucoma Screening in Brookline

The glaucoma screening program conducted in Brookline, Massachusetts was outlined by Dr. Leon Taubenhaus, director of public health in that city, and lecturer on public health practice, Harvard School of Public Health. Selma L. Tirocchi, supervisor of medical services, Multnomah County Welfare Commission, discussed social aspects of blindness and sight conservation in the aging. Both of these papers appear in this issue.

A panel summary and evaluation of the conference was the final program

feature. Participating were Dr. Singer; Dr. Hofstra; Dr. Julia Dickinson, assistant director, preventive medical services division, Oregon State Board of Health; Mr. Bogue, Mr. Shaw and James Knochenhauer, special health services representative, U.S. Public Health Service, San Francisco.

Successful First Step

The conference did not solve all of Oregon's vision conservation problems, nor did the sponsors expect that it would. Its purpose was to bring together for the first time all those organizations and individuals with a primary interest in sight conservation and an actual or potential ability to contribute to the state program. The overall objective thus was to learn first-hand of the activities of others, to define clearly the current needs, and to assess Oregon's ability to meet them. Reviewing the discussions with this objective in mind the conference must be considered a successful first step toward a new unified attack on the diseases and conditions which threaten sight.

GUIDANCE FOR GIVERS

As a reporting and advisory service for contributors to various causes the National Information Bureau, 205 East 42nd Street, New York, issues a *Wise Giving Bulletin*. The Spring 1961 number furnishes financial data on 40 voluntary health agencies that solicit contributions nationally or regionally each year. The tabulation does not pretend to be complete.

The *Bulletin* urges givers to ask for advice freely from contributor advisory services, local or national. "You don't have to follow such advice," it states, "but it may be very useful in making your contributions accomplish the good you intend."

PROGRESS in the PREVENTION OF BLINDNESS

JOHN W. FERREE, M.D.

Executive Director

National Society for the Prevention of Blindness
New York, N.Y.

In his keynote address at the Oregon conference Dr. Ferree outlined achievements of the past half-century and emphasized the challenges of the future—greater support of research, increased facilities and personnel for visual health activities programs, better utilization of present resources, and integration of professional and community forces.*

DURING the war I had the good fortune to be stationed in the 13th Naval District, and my assignment brought me to Portland on several occasions. Then, and on subsequent visits in intervening years, I gained some understanding of the resources of this area, and the social, medical and public health climate in which they may be put to work.

The last time I addressed a sizable group here was as a venereal disease control officer. The subject then was the control of prostitution, which I understand is an academic subject here today. So too are venereal diseases as causes of blindness. Many will recall that it was the shocking amount of blindness due to VD that stimulated early efforts to prevent the disease.

Many heartening evidences of progress and accomplishment in vision conservation may be cited, for example: the prevention of gonorrhoealophthalmia neonatorum, the disease

that blinded some 28 per cent of babies at the turn of the century; the sharp decline in infectious eye diseases and accidental injuries; the reduction and practical elimination, through controlled administration of oxygen to premature infants, of retrolental fibroplasia which in 1950 accounted for about half of the blindness in children of preschool age.

Danger of Complacency

Before we become complacent about what we have done in regard to the causes of blindness just cited, I would remind you that constant vigilance is necessary to hold the gains made. There are some who believe we can safely make optional the use of prophylaxis to prevent ophthalmia neonatorum. There are those who minimize the importance of pre-marital and pre-natal blood tests. We don't realize often that new and lethal toys are coming on the market to replace the hazards that existed prior to control of the sale of fireworks and firearms. Nor are we sensitive to the need for eye safety programs in the laboratories, shops, and recreational

* Presented at the Oregon Conference on Vision Conservation, Portland; October 24, 1960.

activities of our schools and colleges, and in home workshops; as well as the need for safety glasses for children. Industrial eye safety and health programs need expanding as well. Doctors, nurses and hospital administrators, in their respective areas of responsibility, must be persistent in their efforts to prevent RLF by assuring that oxygen is prescribed and administered precisely and meticulously to premature infants.

Current Problems

Where should we go to continue our progress? What are our potentials and how can we realize them?

Many of the problems that face us today are associated with the older age groups. I should like to present to you some facts and figures that are given in "Changing Aspects of Blindness," a pamphlet published recently by the Health Information Foundation of New York City. I could wish that the National Society for the Prevention of Blindness had published this excellent review, which I commend to you for thoughtful study. I take some solace from the fact that the Society was the source of much of the statistical material used.

In 1957 well over half the legally blind population—175,800 of a total of 339,000 at all ages in the U.S.—were aged 65 and over. The prevalence of blindness rose sharply by age from 37 per 100,000 at ages under 20 to 91 at ages 20-39; 211 at ages 40-64; and 1,189 at ages 65 and over. Today's rates are lower at ages under 40 than in 1940, but higher above that age.

Effects of General Diseases

Conditions causing blindness at the middle and older ages are mainly

certain general diseases—usually diabetes and the vascular diseases and specific eye diseases such as glaucoma and cataract. The general diseases as a group were responsible for 5.1 per cent of all blindness cases in the United States in 1940, but in 1957 their estimated proportion had risen to 15.9 per cent. In the latter year they accounted for 22.1 per cent of the new cases.

Blindness caused by diabetes (including diabetic retinopathy) constituted 8.4 per cent of all blindness cases in 1957, and blindness from vascular conditions constituted 6.5 per cent. Among new cases their respective proportions were 11.6 and 8.1 per cent, respectively. Apparently the occurrence of retinopathy in diabetes is related to the duration of the disease, but there is evidence to show that adequate control from its very beginning tends at least to minimize the occurrence of retinal lesions.

Glaucoma a Major Cause

Glaucoma is a major cause of blindness in the United States, responsible in 1957 for about 45,700 cases, or 13.4 per cent of the total. (This proportion has increased somewhat since 1940.) It is estimated that another 150,000 have become partly blind from this disease; about two per cent of the population 40 years of age and over have the disease, and more than half of these persons are unaware of it.

Medical or surgical management of glaucoma, preventing the onset of blindness, is possible if it is discovered in its early stages. However, the disease is symptomless in these stages and is thus hard to detect except with a tonometer, an instrument

devised to measure intraocular pressure. Authorities agree that such a test should be part of every routine physical check-up in older persons, that is, all over 40 years. In addition, mass screening programs for the detection of glaucoma are being used on an ever-increasing scale and with marked success.

Prevalence of Cataract

Cataract is today the single most important cause of blindness. Most cataracts are the senile type, and they accounted for an estimated 16.5 per cent of all blindness in 1940. In 1950 and 1955 the proportion from this cause rose to just under 22 per cent, but in 1957 it dropped to 17.7 per cent. It accounted in 1957 for 16 per cent of all new cases of blindness in this country. Although surgical removal of the lens has been successful in the vast majority of cases, cataracts associated with the aging process cannot yet be prevented.

Challenges of the Future

It is with these conditions that we, chiefly, must be concerned if we are to make continued progress in preventing blindness. While there is much we do not know about them and we are, therefore, precluded from cure and primary prevention, there is still much we do know; much that can be applied by way of secondary prevention through early detection and treatment, thus postponing or lessening disability or halting its progress.

In the sessions of this conference you will be hearing more about these causes of blindness which I have commented on and the measures for dealing constructively with them. I shall, therefore, as your keynoter, move on

to highlight only some observations which I hope will be helpful to you in charting, either at this meeting or in the near future, a course of action that will promise a significant reduction of blindness in Oregon.

We are challenged to:

1. *The support of research, basic, clinical and epidemiological*, that will shed more light on all those biologic and environmental factors that may be associated with blindness and impairment of vision—from hereditary defects to the macular degeneration of old age, from industrial hazards to cataract formation. Only by learning more about primary causes will we be able to progress to primary preventive measures. But while we are gaining this knowledge, let us move ahead with research that will improve our methods and tools for applying better what we already know. Why, with what we know, do we have such a high incidence of amblyopia ex anopsia or blindness from senile cataract? We know that early detection of the cause and treatment will prevent much of the former and that surgery will restore useful vision to 85-90 per cent of the latter. There is a great need for education on the success of cataract surgery so that many more will avail themselves of its benefits. We can be assured from past experience that well-designed protocols for studying these and other such questions, and built-in evaluation of our various public health and educational programs will lead us along the path of progress.

2. *Provide more facilities and personnel* for carrying on visual health and rehabilitation programs. We know that if by some miracle we could moti-

vate all who could benefit from some of our present preventive and rehabilitative know-how to make use of it we would be completely swamped. This has happened with some glaucoma screening programs—the G-day type. Another illustration is the lack of facilities and trained personnel for education of the partially seeing. In the country at large only 10 per cent of the estimated 80,000 children in this category are receiving what they should from our school systems.

3. *Make very real to people the several opportunities that exist* for preventing blindness and conserving vision and do this in such a way that they will act intelligently, not only in their own behalf but also in behalf of others through community effort.

4. *Make better use of resources presently available;* to stimulate and promote the creation and support of additional resources, and most importantly, seek to bring together, for sharply focussed attack on our problems, all the presently scattered professional and community forces that have responsibilities for or interest in making progress in vision conservation. Quite frankly, I believe there are too many agencies doing, in an unrelated fashion, bits and pieces of what should be a well-integrated comprehensive program. Our cause is not well served by a continuation of this fractionated approach to a particular aspect of community health. What is more, we cannot in the public interest, or indeed in our individual interests, afford the doubtful luxury of indulging our prejudices, perpetuating old feuds or going our separate ways.

I have assumed, and I believe correctly, that this conference represents

an important move in the direction of getting together to do a job that will truly and surely make for progress in the prevention of blindness and the conservation of vision. I express to you my very deep gratitude for the opportunity to keynote it, and, close with congratulations and thanks to those responsible for arranging it; Dr. Richard H. Wilcox, your state health officer, Mr. Robert L. Bogue, administrator of the Vision Conservation Section and our host, the Portland Junior Chamber of Commerce. The National Society for the Prevention of Blindness is honored to be associated with the Oregon State Medical Society, the Oregon Academy of Ophthalmology and Otolaryngology and the U.S. Public Health Service in cooperating with the Oregon State Board of Health as the sponsors of this conference.

U.S. TESTS OF NEW DRUGS

The United States Food and Drug Administration announced on March 27 a new regulation aimed at tightening its control over new drugs. The agency said it now would require manufacturers to furnish samples of drugs before they were given safety clearance. The order goes into effect in sixty days. The purpose is to obtain information that will facilitate tests in the Administration's laboratories before marketing applications are approved.

The agency will establish in its tests the correspondence between the drug employed in clinical studies and that which in fact will be marketed. The new regulation requires that the manufacturer provide samples of new drugs taken from laboratory experiments, samples from a batch intended for initial marketing and samples from full-scale production.

Role of the Ophthalmologist in Community Activities for Vision Conservation

HOMER E. SMITH, M.D.

Executive Secretary and Treasurer
Pacific Coast Oto-Ophthalmological Society
Chairman, Professional Advisory Committee
Utah Society for the Prevention of Blindness

A vigorous, civic-minded group is guiding
the program activities of the Utah Society.*

MANY ophthalmologists throughout the country who are making important contributions to community activities for vision conservation realize that in doing so they are paying a debt of considerable proportions. Few of them could have afforded the full cost of a general medical education, plus the necessary specialized training. Private endowment or taxes have made this possible, since the tuition fee is only a small percentage of the actual cost.

The practice of medicine and surgery should be more than just a way to make a living. The better the training of the ophthalmologist, the stronger his moral fiber, and the higher the caliber of his work, the more he dedicates himself to the problems of sight conservation that affect all citizens. It might be said that in some respects his work becomes a counterpart of his religion.

In seeking professional guidance for vision conservation programs, then, we must enlist ophthalmologists who believe in community service. When

we organized the Utah Society for the Prevention of Blindness, a division of the National Society, a great deal of thought was given to the selection of advisory committee members who are civic-minded and have a strong sense of responsibility toward humanity.

Current Projects

At present we do not have in Utah the ambitious vision conservation program planned by the State of Oregon, but we have made a start. For example, a preschool vision screening project, sponsored by the Delta Gamma Fraternity, is under way. An active committee has been appointed to aid in expanding public school facilities for the education of partially seeing children.

We have organized a speakers' bureau through which ophthalmologists may be invited to present subjects of interest to lay people throughout the state. Universities, high schools, parent-teacher associations, service clubs and churches are availing themselves of the service.

An active program of glaucoma screening has been undertaken in co-operation with the Sight Conservation

* Presented at the Oregon Conference on Vision Conservation, Portland; October 24, 1960.

Department of the Utah Commission for the Blind and the Utah Oto-Ophthalmological Society. Some of our ophthalmologists have gone two to three hundred miles to administer the tests—a truly dedicated effort.

Public Education

These screening projects and other activities of the Utah Society are receiving excellent publicity in the local newspapers, and thus awareness of the need for eye care is increased.

When a solar eclipse was to be visible in our area, we prepared news releases emphasizing the danger of retinal burns from viewing it without proper eye protection.

The ophthalmologists on our executive committee contributed sufficient money from their personal funds to give impetus to the production of a film on amblyopia, "Crossroads at Four." The initial sum was augmented by gifts from Salt Lake City opticians; and Dr. John W. Ferree, executive director of the National Society, was instrumental in obtaining additional financial assistance from the David Warfield Fund of the New York Community Trust. Designed particularly to alert parents to this eye condition in which dimness of vision occurs without apparent eye disease, the film emphasizes the importance of early eye examinations, and the needless loss of sight that results from neglect.

Civic-Minded Group

Our Utah Society was organized only two years ago and we feel we have only scratched the surface of things that need to be done. We do, however, have a vigorous, aggressive, civic-minded group of professional and

lay persons working well together with no thought of personal gain. We intend to drop committee members who are not active and not basically interested in the Society's objectives.

Our future projects include a poll of all the eye physicians in Utah to find out how many treated retinal burns of persons who viewed the solar eclipse. We also plan to set up a clearinghouse of information on eye injuries from BB guns, bows and arrows, firecrackers, etc. We hope to get statistical data that will be useful in future preventive action. There is always some agitation to have legislation regarding the sale and use of these hazardous objects removed from the books. It usually stems from motives of financial gain and should be carefully controlled.

We desire to extend services to blind persons so that more of them can be directed to the proper agencies for dealing with their health, educational and recreational problems. While it is not a function of the ophthalmologist to take care of blind people he should be well aware of the community resources to which they can be directed.

We have plans for additional films and for broadening our general program of public education in sight conservation.

Competition Impedes Progress

Above all, I should like to emphasize my conviction that there should be no competition in the field of blindness prevention. Let us hope that a united effort can be made and that the leaders in this field realize the necessity for integrated action.

Nor should regional and state activities be organized in competition. Let us all work hand in hand, with vigor and goodwill, in a great cause.

PROGRESS IN OPHTHALMOLOGY

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Oregon has made enormous strides in providing for training of ophthalmologists, in services for patients, and in treatment techniques.*

IN THE post-war period progress in ophthalmology has been rapid in all aspects related to vision conservation; that is, in education, in facilities, in programs for patient services, and in research. Educational programs and facilities for the training of ophthalmologists and ancillary personnel, such as orthoptic technicians, have been expanded and improved dramatically. As evidence that more and better-trained ophthalmologists now serve the public, consider briefly what has happened here in Oregon. Since the end of the war 24 ophthalmologists have been trained in a three-year residency program at the University of Oregon Medical School and have been certified by the American Board of Ophthalmology. This is a larger number than had been trained in the entire history of the Pacific Northwest States prior to 1945. Furthermore, there are now seven physicians in training at the Medical School, and a new program for training ophthalmologists has been started at the Good Samaritan Hospital in Portland. Scientific programs, hospital staff conferences, and post-graduate training sessions are available to the

practicing ophthalmologist in Oregon throughout the year.

Patient Services

In services for patients there also have been enormous strides in Oregon. Facilities have been greatly improved at the Medical School and in private hospitals. State-wide programs have been established to help those unable to afford the cost of ophthalmological care. One example is the program for visually handicapped children established at the Medical School by the Oregon State Elks Association in 1949. The Elks Association has contributed approximately \$150,000 for support of the children's eye clinic and related services. Over 8,000 individual children have made over 40,000 visits to the clinic during the past ten years.

The Oregon Commission for the Blind also has established two medical care programs, one in connection with the Division of Vocational Rehabilitation, and the other related to sight conservation and restoration for adults unable to obtain ophthalmological services by the usual means. As the result of these and other programs it can be said that no one in Oregon need become blind through inability to pay for hospitalization and medical care. These aspects of progress in ophthalmology will be

* Presented at the Oregon Conference on Vision Conservation, Portland, October 25, 1960.

discussed in greater detail elsewhere. Our main object is to review some of the new scientific knowledge which is applicable to conservation of vision and prevention of blindness.

Methods of Examination

My associates and I have selected several topics of general interest for discussion at this session, but it seems proper to start with advances in the methods of examination. To appreciate progress in this field it is necessary to recall that it was only one hundred years ago that it first became possible to study the interior of the eye with the ophthalmoscope. In order to look through the pupil and visualize the retina, blood vessels, optic nerve, and other structures in the back of the eye it is necessary to use a special system of illumination, and a system of focusing lenses. Even a half-century ago the ophthalmologist largely depended upon light reflected from a hand-held mirror, and he used a crude system of lenses.

I am going to show you a film prepared at the University of Oregon Medical School. This movie illustrates how methods of studying the interior of the eye have been improved. Included are demonstrations of how the pressure is measured, not only of the intra-ocular fluids, but also the pressure of the blood vessels. You will see complex instruments used for examination of other parts of the eye. Then, because a new camera system has been developed at the Medical School, it will be possible for me to show you colored movies of the pulsations of the blood vessels of the back of the eye, to demonstrate the movement of red blood cells through these tiny vessels in normal and in diseased eyes.

Advances in Treatment

After the movie Dr. Robert Burns will review advances in treatment. He will discuss some new operative procedures and also the use of photo-coagulation in the treatment of retinal detachment. In his discussion of photocoagulation, he also will call your attention to accidental photo-coagulation, that is, "eclipse blindness." A number of Oregon children have suffered burns of the retina as the result of looking at the recent eclipse of the sun without adequate filters to protect their eyes. Dr. Burns also will discuss some of the newer drugs and their impact on vision conservation.

Dr. Leonard Christensen, in a discussion of tissue transplants, will point out that, of the ocular tissues, only the cornea and the vitreous have been useful in sight conservation and restoration. In Oregon fresh corneas and vitreous for transplantation generally have been available from patients dying in the general hospitals in those communities where these operations are being performed. Then, to demonstrate the possibilities as well as the limitations of corneal transplantation, he will show you slides of a number of patients before and after they have had the operation.

Dr. Milton Singer will emphasize that despite the introduction of safety programs in industry a large number of eye injuries still result from accidents. He will present slides depicting simple trauma, such as abrasions and injuries, and then will illustrate and discuss the management of the more serious eye injuries, such as chemical burns and lacerations.

The final presentation of the morning will be by Dr. Robert Fischer who

will discuss corneal lenses, low-vision aids, and prosthetic devices. In his discussion of corneal lenses Dr. Fischer will emphasize that a thorough ophthalmological examination is indicated for all prospective contact lens wearers. It is safe for most individuals to wear these lenses, providing they are properly fitted, worn for reasonable periods of time, and used with proper hygienic considerations. Dr. Fischer will also describe and show some of the devices to aid individuals with reduced visual acuity. He will discuss the circumstances under which these aids can be used, as well as their limitations.

SIGHT AND THE SPACE AGE

The problems related to seeing well in outer space and at supersonic speeds are becoming increasingly important as the idea of putting a man in space approaches reality. In a recent article in the *Journal of the American Optometric Association* Major Floyd Morris outlines some of them.

At increased altitudes there is a darkened sky above with a bright cloud floor below, a reversed light distribution pattern that causes glare. An increase in solar illumination intensifies visual discomfort. Other problems relate to a haze, whose exact nature has not been demonstrated, that appears in the cockpit; space myopia resulting from flying in a homogeneous field, weightlessness or zero gravity, and the wearing of corrective spectacles with pressure suits requiring the use of a faceplate. Major Morris suggests some possible solutions for these various difficulties.

Supersonic speed results in the slanting of optical surfaces, decreases abil-

ity to recognize a moving target, and produces a lag in human visual perception time.

Research on airplane pilots' failure to see approaching planes because of temporary myopia has been conducted by Dr. Gordon G. Heath of the division of optometry, Indiana University, on a U.S. Air Force grant. The objective is to produce safety devices which would decrease the possibility of head-on collisions.

A case demonstrating the effect ejection into space has on the eyes is reported in the *American Journal of Ophthalmology* by Dr. Edward O. Bierman. A 34-year-old man in excellent health was ejected from a disabled jet aircraft traveling over 600 miles an hour at an altitude of 18,000 feet. Although the accident resulted in severe bodily injuries and marked distortion of the lids, conjunctiva and face by hemorrhages and edema, the eyes themselves were not injured.

INDUSTRIAL OPHTHALMOLOGY COURSE

The special problems of most efficient use of eyes and of their health and protection in industrial plants will be the subject matter of a new postgraduate course offered to practicing eye physicians at the annual meeting of the American Academy of Ophthalmology and Otolaryngology. The Academy meeting will be held at the Palmer House, Chicago, October 9 to 13, 1961. This is one of many courses offered to keep the busy eye specialist up to date on new developments in his profession.

The course will be given over the three day period, October 10, 11, and 12. Instructors will be Dr. Hedwig Kuhn of Hammond, Indiana; Dr. Ralph W. Ryan of Morgantown, W. Va.; and Dr. Roderick MacDonald, Jr. of Louisville, Kentucky.

GLAUCOMA SCREENING IN BROOKLINE

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A program demonstrating how a voluntary organization, in this case the Lions Club, can team up with an official health department to attack a major community health problem.*

THE Brookline Glaucoma Program was conceived in April 1957 at a meeting of the Sub-Council on Health of the Community Council. This meeting was called so that the members could learn what the various service clubs were doing in the health field. Representatives of the Lions, Rotary and Kiwanis Clubs were invited to describe their programs. During the discussion the Council was surprised to find that one club had a problem of unexpended funds and because of this was having poor results in its fund drives. The Lions Club expressed dissatisfaction over the fact that its funds were being used in a haphazard rather than in an organized fashion.

A week later the Lions Club requested the aid of the Health Department in developing a better-organized community program. The members felt that by giving glasses or an occasional reading aid to an individual they were not really performing a good community service, such as might be done through an organized effort. Their funds were restricted to sight-

saving, and it was suggested that a glaucoma screening program as a joint Lions Club-Health Department enterprise might be the best solution to their problem.

Large Older Population

There were several reasons why the Health Department recommended such a program. The Town of Brookline has a large older population. Thirteen per cent of its people are over age 65, compared to 10 per cent in the state and nine per cent in the nation. Glaucoma is a very serious disease, causing 14 per cent of all blindness. It is estimated that one out of every eight cases of glaucoma results in blindness. The disease primarily attacks the older population and is known to occur in two per cent of those over age 40. At this particular time the Health Department was seriously considering the needs of older people and was looking for a program tailored specifically for this group. Also, the department was housed in a new and well-equipped health center which has excellent facilities for the screening.

The Lions Club accepted this proposal and there was a series of meet-

* Presented at the Oregon Conference on Vision Conservation, Portland, October 26, 1960.

ings between Health Department and club officials to develop certain basic policies. It was agreed, for example, that financial support for the program would be joint. The Lions Club would take care of expenses which would be difficult for the Health Department to cover, such as additional personnel and excessive promotional costs, and the purchase of capital equipment. The Health Department would assume expenses for housekeeping, supplies, drugs, nursing personnel and follow-up; also ordinary promotional and educational costs.

There was much discussion as to whether this should be a "one-shot" program or a sustained one. The latter was agreed on because we felt that it would allow us a better system of follow-up. If we did not have too great a load of referrals at any one clinic, follow-up could be effectively carried out by existing personnel.

A request was sent to the Medical Society in May 1957 for approval of the program and appointment of a representative to serve on the technical advisory committee. The Medical Society did not act until the following September. Then it not only approved, but also gave the Health Department a boost by stating that it appreciated our holding up the program until the society could be involved in the planning.

Technical Advisory Committee

Among the technical advisory committee members were the chiefs of eye services of the three major teaching hospitals in the metropolitan area, or their representatives. The Health Department was represented by the director of public health and the health educator; the Lions Club by

its officers, among whom were an ophthalmologist and an optometrist. There was also representation from the local Medical Club, the County Medical Society, the State Department of Public Health, and the State Division of the Blind. The committee met at regular intervals, under the auspices of the Lions Club. These were all dinner meetings, held in an atmosphere conducive to developing a good relationship between the committee members.

The functions of the technical advisory committee were two-fold: to develop the procedures and standards for the clinic; and to define the ethics for operating it. Many decisions had to be made. Each procedure was developed in detail so that it would be carried out as prescribed. A maximum load of 100 persons at each clinic was established.

We felt that not only were we responsible for referring all cases of potential glaucoma, but if we found other eye diseases to see that these, too, were adequately cared for. We therefore set up these standards:

Any intraocular pressure of 25mm.Hg. or more was automatically referred. We originally set a differential tension of 4mm.Hg. and later changed it to 6mm.Hg. as an automatic referral irrespective of the levels of tension. We considered a distance vision of 20/40 as the cut-off point for normal. However, cases of refractive errors were not referred unless the examining physician advised. On the examination of the eye, and on the ophthalmoscopy, the determination as to whether or not to refer depended entirely on the judgment of the examining physician. Most cases of lens changes were referred.

Clinic Personnel

A major problem, and one which required much discussion and consideration by the committee was whether or not to allow optometrists to work in the clinic. It was finally decided that they should work there along with ophthalmologists. We reasoned that a large number of the people over 40 are cared for by optometrists. Under our state law optometrists cannot put anesthetic drops in eyes, and their patients therefore do not have the benefit of routine tonometry when getting their glasses. We felt that by putting some optometrists to work in the clinic their colleagues would not feel threatened and would refer their patients for tonometry. This is exactly what happened. As this was to be an appointment clinic, we gave a block of eight appointments every 20 minutes. In this way nobody would have to wait too long.

Once these and other decisions were made, and the date set to open up our program, we set about promoting it. The first step was to get the endorsement of the local Community Council, which has 78 agency members. Next a letter was sent to each of these agencies by the Council president stating that the Council had endorsed the screening program, and asking each organization to have a film and a speaker on glaucoma at one of their meetings. We had in the meantime set up a bureau of competent speakers, and secured the Canadian film "Hold Back the Night." We feel that this film is far superior to any American production on glaucoma that we have seen.

Our next step was to orient the professional workers who would influence many of the older people. We devoted

a great deal of time and effort to meeting with groups of teachers, social workers, nurses, pharmacists, recreation workers, and other community personnel. We held special clinics at which each of these people had a preview of the procedure; thus they could tell older persons: "I have taken this test and it doesn't hurt."

Publicity Campaign

Prior to the opening of the clinic we set up a major publicity campaign which included feature stories in the metropolitan press; pictures of local governmental officials having their tests, and one of our technical advisory committee meeting with the governor. A picture story was featured in our *Health Bulletin* which is distributed quarterly to each of the town's 20,000 households. Exhibits were placed in the public library and in store windows.

We first gave block appointments to captive groups such as policemen, firemen, teachers, golden-age clubs, religious organizations, PTA's etc., and the secretaries of these groups filled the appointment schedule. This assured us an initial load for the clinic. Later we depended on what the health educators call the bandwagon technique. Members of the captive groups who had their tests served to promote the idea among their friends and neighbors. We also kept on featuring it in our *Health Bulletin* and in repeated newspaper releases based on the most recent screening statistics.

Clinic Procedure

Our clinic procedure is as follows: The patient enters a large, pleasant auditorium which is used as a waiting room, is greeted and registered by the

volunteers, wives of Lions Club and golden-age club members. He is first tested for distance vision on a Snellen chart by a trained volunteer or an optometrist. After a short wait another volunteer attends to his clinical record and maintains personal contact by calling him by name when it is time for the next test. At first we used the Harrington screener but after one year discontinued it. The tabulation of our 1958 results showed that three out of four people, whether or not there was anything wrong with their eyes, were able to read all the Harrington cards correctly. We felt this was too high a number of false negatives to justify the continued use of this test.

The next step is an inspection and ophthalmoscopic examination of the eye, done by residents from the eye services of the teaching hospitals. Tonometry is then performed by another resident. At the end of the examination the patient sees the public health nurse, who either assures him that the results of his tests are all right, or if referral is indicated, takes the first step to initiate it.

After conferring with the nurse the patient is asked by another volunteer to fill out a post-clinic reaction sheet which indicates his attitude towards the testing procedure. On the basis of a regular evaluation of this questionnaire we were able to effect slight changes which made the program more satisfactory to the patients.

Keeping of Records

We use the McBee "key-sort" punch card record system because it is an easy method of tabulation. We designed the card ourselves so that it would serve both for registry and follow-up. In order to make sure that

all records are properly kept, and to keep track of the clinic procedures, it was deemed advisable to have a medical person supervise them. I, myself, took on this role and have checked all records. This takes about an hour and a half for each clinic.

Program Results

The results of our program, as of October 7, 1960, are as follows:

We have held 41 clinics to date, and have examined 3,018 patients. There are 25,000 people in Brookline over age 40, so we have now examined about 12 per cent of the population of risk. Of these, 2,356 were normal; 662 were referred; 196 were referred for abnormal tension. Of the 53 glaucoma cases so far proven, 15 were previously known, but 38 were unknown. In 58 people the diagnosis of glaucoma was not confirmed, and in 85 we are still awaiting the results of follow-up. At the same time we referred 466 patients for other eye conditions. We are still waiting for reports on 245 of these, but of those who have reported we have had confirmation on 205. Our diagnosis was not confirmed on 16.

In the town of Brookline, as I said earlier, 25,000 people are eligible by age for screening. We screened a higher percentage of the older groups than the younger. This means we are doing better in the population of higher risk than our statistics show. We screened more females than males. Also we find that as a result of our clinic procedure the private physicians when doing refractions also do tonometry, whereas previously most of them did not. Thus the screening which has resulted from our program is actually much greater than our statistics show.

The success of our clinic is also evident in the interest shown by other communities. Since it was established nine new clinics have been put into operation in the State of Massachusetts, all of them modeled after ours. Three more are under consideration today.

Our average cost runs about \$1.00 per patient screened; or about \$50 for every case discovered. Considering the fact that it costs the state of Massachusetts \$1,500 to support each blind person for a year, we feel that aside from its human value our clinic represents a great economic gain to the community.

Health and Economic Benefits

Our experience indicates that glaucoma screening makes an ideal public health program. Glaucoma is a disease which can cause total blindness and which can develop insidiously. The methods of detection are simple and inexpensive. Once diagnosis is established blindness can usually be prevented. The procedure is relatively inexpensive compared to the cost of blindness. The expense of maintaining two blind people for one year will more than adequately finance the clinic operations for a year. We also feel that we have demonstrated how a voluntary organization in the community, such as a Lions Club, can team up with an official health department to solve a major community health problem. Our results speak for themselves.

THE NURSE-HER ROLE IN EYE HEALTH is the title of a 12-page pamphlet published by NSPB; No. 137; price 10 cents per copy.

WARNING AGAINST QUACKERY

Medical mail-order quacks are termed the "meanest sharpies in the world" in the March issue of *Today's Health*, published by the American Medical Association.

"These human vultures," writes Harry Kursh, "feed on the ignorance and hopes of men and women who yearn for the 'miracles' that legitimate medicine thus far has been unable to provide."

The U. S. Postal Inspection Service is credited with preventing mail-order quackery from becoming possibly the greatest swindle of all time.

High on the list are preparations and devices that appeal to vanity, and "cures" or treatments for ailments for which no effective treatments are actually known. These range from "dietless" reducing schemes based on pills, tonics, and gadgets to the most tragic of all nostrums, "cures" for various eye diseases and conditions, heart disease, arthritis and cancer.

The mail-order quack, no matter how harmless his cure or gadget, is a potential killer, says Mr. Kursh. Mail-order quackery causes misery, injury, and death by delaying early and proper treatment by a physician. Time after time postal inspectors have seen such delays spell the difference between life and death.

"Avoiding mail frauds can be a simple matter of regarding any therapy, device, treatment, remedy, or cure sold by mail with suspicion, especially if it makes sweeping claims.

"In any case, your best protection is your own doctor. If you think it's something he may not have heard about, he can look into it a lot quicker and more reliably than you can."

SOCIAL ASPECTS OF EYE PROBLEMS IN THE AGING

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Community centers which provide medical-social counseling services are recommended as an important aid both to physicians and patients.*

IN OUR previous conference discussions reference has been made to the increasing number of elderly persons in our population, and the changes in the eye problems of this age group.

Blindness is becoming a secondary condition to chronic illness. This presents a complex problem and in order to cope with it successfully the close cooperation of informed professions and an informed public is necessary.

I do not wish to paint a grim picture of the deficits of old age because it is true, of course, that the degree to which these represent hardships depends on the individual. Some aging people who have strong vitality and flexibility adjust well even to severe changes precipitated by advancing years. Frail individuals, on the other hand, may withdraw and become frustrated, lonely and bitter. Such persons may give up and allow others to plan for them. In these cases I have observed that when medical problems are superimposed physicians are not able to stabilize the illness, and repeated medical intervention very often becomes necessary.

When general chronic diseases result in visual problems anxieties of the patient often revolve around the need to understand thoroughly the medical diagnosis. These patients and their relatives are slow to accept impaired vision or blindness and it is quite common for the patient to withdraw emotionally and socially. This condition should be dealt with immediately. The patient must be encouraged to make realistic plans, and receive help in coping with any emotional or social problems that loss of sight may create for him. Depression does not always follow blindness but when it does it is usually characterized by insomnia, loss of appetite, self-pity, and excessive crying. Treatment generally consists of emotional support; and starting in a limited way to rehabilitate the individual by helping him to help himself while he is in the hospital, and to reorient himself in getting about his home. If other resources are necessary, such as the services of the department of public health and the blind commission, they should be involved in the situation as early as possible.

We are fortunate in having within our community a large variety of paramedical agencies, but in order to

* Presented at the Oregon Conference on Vision Conservation, Portland, October 26, 1960.

develop the kind of program required to meet the problems of chronic illness it is essential that avenues of communication between them be opened, and that optimum cooperation and collaboration be mutually agreed upon. No program can be complete without these elements and yet they are the most difficult to achieve. Existing agencies and facilities are too frequently unknown to or overlooked by physicians when treating patients who do not require general hospital care.

Counseling Services

In several large cities throughout the country a comparatively recent approach to better utilization of paramedical services and facilities has been made by the establishment of what are termed chronic illness service centers. I prefer to call them medical-social or paramedical counseling services. These centers provide direct service such as counseling and guidance to the patients and/or their relatives. They also give paramedical consultation to physicians on request, and they sponsor or support both public and private community projects in research, education, and prevention.

In most cities these centers are staffed by a medical social worker and a secretary. They usually function under the aegis of the health division of the united community council. The health division reviews the existing paramedical services and facilities, studies the needs of the community, and acts as a policy-making board. The medical-social counseling service provides the direct help.

Physicians should be offered this kind of service. They need to talk with someone in whom they have confidence and thus be assured that their

patients will receive prompt and co-ordinated help. Within our community we already have a Health Division Council but we do not have a medical-social counseling service. Such I feel is urgently needed, and I am convinced that it would help to reduce considerably the problems related to eye conditions in the older age group.

The fact that illness and disability heighten religious feeling is all too often overlooked. In view of this it becomes apparent that paramedical services and facilities should give more recognition to the role of religion in aiding older patients.

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AAOO HOME STUDY COURSES

The 1961-1962 Home Study Courses in the basic sciences related to ophthalmology and otolaryngology which are offered as a part of the educational program of the American Academy of Ophthalmology and Otolaryngology, will begin on September 1 and continue for a period of ten months. Detailed information and application forms can be secured from Dr. William L. Benedict, the executive secretary-treasurer of the Academy, 15 Second Street S.W., Rochester, Minnesota. Registrations should be completed before August 15.

EYE PROBLEMS in EARLY CHILDHOOD

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A pediatrician urges early identification of vision problems,
emphasizing that the preschool period is a critical one.*

I HAVE been asked to review some of the major eye problems in young children. It is really rather presumptuous of me to speak as an expert on eye problems for I am a pediatrician and not an ophthalmologist. My perspective is bound to reflect that experience. For instance, the ophthalmologist might stress his experience with serious accidental eye injuries in children. In over 20 years of private practice I fortunately have never encountered a serious eye injury. Certainly most such injuries reach the ophthalmologist eventually, and I hope at an increasingly early interval after the injury, for preservation of vision is often at stake. I would like to think that my continuous emphasis to parents on prevention of accidents may have had some influence on my lack of experience with eye injuries.

Prophylaxis for Ophthalmia Neonatorum

In the newborn period obstetricians and pediatricians are concerned with prevention of gonorrhreal ophthalmia or ophthalmia neonatorum. Before the advent of antibiotics and the required use of one per cent silver

nitrates as a prophylaxis approximately 25 per cent of all blindness was due to this condition. With more active and successful means of treating gonorrhea in the pregnant mother this condition is diagnosed very rarely. This has led to pressures for eliminating the routine use of silver nitrate or for substitution of an antibiotic locally in the newborn's eyes. Certain alarming facts should be sufficient to cause us to resist any such pressures.

In Oregon the venereal disease rate in teen-agers has increased 350 per cent in the past ten years. With the accompanying increase in early marriages and the tendency for young people to treat venereal infections lightly, this development could account for a jarring rise in incidence of ophthalmia neonatorum and possibly of congenital syphilitic eye conditions as well. Adding the experience with bacterial strains resistant to antibiotics, physicians must be more vigilant than ever to prevent this once common cause of blindness. From the foregoing it would seem entirely appropriate that last year the Board of Health refused to modify its requirements providing for continuing use of silver nitrate as the prophylactic for ophthalmia neonatorum on the advice of the appropriate medical social committees.

* Presented at the Oregon Conference on Vision Conservation, Portland, October 25, 1960.

Record of RLF

In recent years one of the most exciting phenomena in all medical history has been observed and recorded. During the later 30's and early 40's the care of prematures received the major attention of a number of outstanding pediatric researchers. As anoxia began to be blamed for many premature deaths, closed system incubators were devised which allowed for the small premature baby to exist in an atmosphere of almost pure oxygen. In 1942 retrobulbar fibroplasia in prematures was first diagnosed. As this condition almost invariably leads to nearly complete blindness, ophthalmologists and pediatricians became justifiably alarmed at the increasing incidence. The pediatric triumphs reported in the saving of babies weighing 1,000 grams and under was darkened by the stark likelihood of later discovering that the babies were blind.

Intensive research in the next six years revealed the true nature of retrobulbar fibroplasia. By 1951 the relation of intensive and prolonged oxygen therapy to the occurrence of the disease was reported. By 1955 the pathogenesis had been proved clinically and in laboratory animals. Now all modern incubators have oxygen governors. With adequate control of oxygen to the minimum necessary to maintain life, retrobulbar fibroplasia has now been virtually eliminated.

Atresia or blockage of the tear ducts is a common condition of newborns. Some clinicians have blamed the use of silver nitrate for the production of this condition. Most ophthalmologists dispute this contention. Most cases of blockage of the tear ducts will clear as the ducts open spontaneously.

If the condition persists beyond the first few months the ducts can be opened successfully by mechanical probing.

Congenital cataracts may occur as a result of injury to the developing fetus, with German measles in the first trimester of the mother's pregnancy as a common cause. It is important to recognize this condition early and to determine the degree of visual impairment, so that surgical intervention can be planned when necessary.

These are the most common conditions found during the newborn period. They emphasize the need for careful examination of the eyes during the first few days of life. Sometimes it is difficult to examine the eyes of a newborn, and several examinations are required before sufficient information is obtained.

Early Attention to Cross Eye

During the first three months of life the baby has not learned to fuse the images entering the two eyes and therefore there is double vision. The eyes may wander a great deal, but there is generally no fixed pattern. However, any constant deviation in muscle balance by age six months should be referred to an ophthalmologist for careful watching. An unrecognized or neglected strabismus may lead to irreversible loss of vision in the crossed eye. During the first three years a squint is most commonly due to anatomical disturbance in the nerve supply. If the squint does not appear until three to five years, it is generally due to a refractive error. As stated, the child with a squint should always be carefully examined as soon

as it is noticeable, for there may be other conditions such as congenital cataract, chorioretinitis, or retinoblastoma which may destroy the vision in one eye and cause a squint. Strabismus may sometimes be treated by patching the good eye if done before the age of six. When due to refractive error, corrective glasses are usually indicated. Some cases require eye muscle surgery.

Concerning purely refractive errors, many children reveal significant difficulties in the preschool years. It is obvious that refractive errors should be diagnosed and treated at the earliest possible age. This brings up the matter of preschool vision screening as this might relate to preschool screening in general.

Screening at Preschool Age

For the past two summers the Maternal and Child Health Section of the Oregon State Board of Health has conducted a hearing screening program for preschool children. This service has been offered through local health departments to those counties wishing the program. Last summer nearly 2,000 children between two and six years of age were screened. Through the sponsorship of the local health department and the cooperation of the parent-teacher associations and women's clubs the program is a great success, and we are hoping gradually to expand it. The volunteers have been largely responsible for publicity, arranging invitations and making appointments. They have also acted as receptionists. We have felt that we should develop this program slowly and adapt our techniques of testing from experience gained. For instance, the literature on the subject

states that screening can begin as early as three years of age. We have demonstrated that we can get valid tests in children of age two, and in a few cases even younger. This has been accomplished, however, through the technical know-how of a highly trained audiologist who supervises our hearing conservation program.

Hearing screening is accomplished through audiometry, which is a technical skill not generally acquired by the average pediatrician or general practitioner. He therefore feels that hearing screening is a real service to his patient and to him and so the program has been accepted by the private physician quite enthusiastically. On the other hand, the private practitioner generally feels competent to screen the young child for vision. It would seem to me that the problem of vision screening of the preschool child could be approached best through education of the parents concerning the value of good eye examinations as a part of regular complete physical examinations, and through education of the physician to take the time to do a good screening examination and to refer to a competent ophthalmologist when any significant abnormality is found.

Dental screening in the preschool period is equally important. Yet if we adopt a program of multi-phasic screening—that is, doing vision, hearing and dental examinations at the same time—the problems multiply considerably. Furthermore, there is the real risk of incurring the ill will of the private physician and his cooperation and backing is absolutely essential. This does not mean that some practical form of acceptable vision screening could not be worked out.

From the foregoing, it can readily be concluded that most common eye conditions in infancy and the pre-school years are preventable. The physician, the public health worker, the kindergarten teacher, and the parent each has an obligation in the preservation of vision of the preschool child.

PROTEIN DEFICIENCY IN CATARACT

In the *Survey of Ophthalmology* Dr. David Schoch comments on a paper on "Experimental Cataract in Protein Deficiency" by Kalyan Bagchi that appeared recently in the *Journal of the Indian Medical Association*. Dr. Schoch writes in part:

"India has long been a training ground for the incipient cataract surgeon because of the plenitude of patients requiring attention. The non-surgically oriented ophthalmologist has also been interested because of the opportunity this presented to investigate the possible causes of cataract formation. All negative facets of Indian life have thus been implicated: heat, ultraviolet light, poverty, malnutrition, generalized disease and debility and lack of sanitation.

"This article investigates one such facet, the low protein diet. The author shows that young pigs on a protein deficient diet develop mature cataracts. The extrapolation of this finding to humans is not necessarily warranted. Studies made on prison-camp survivors in past wars and on the survivors of that special horror of World War II, the German concentration camps, did not reveal a particularly high incidence of cataracts, although

nutritional amblyopia due to optic nerve damage was common.

"The finding of decreased glutathione and protein-bound SH groups has been reported frequently for all types of cataracts and cannot be assumed to have any specificity here."

ELECTRONICS IN MEDICINE

A limited production of an electronic device for recording pupillary movement is under way at General Precision Equipment Corporation, reports the company's newspaper, *GP General*. Pupil reactions are used to indicate the presence of lesions within the nervous centers and pathways of pupillary control.

Only two electronic pupillographs, as the device is called, exist today. The original has been used at Presbyterian Hospital in New York since 1957 and another was recently delivered to the Mayo Clinic. A third, still in production, is committed to the Federal Aviation Agency for use in the study of jet crew fatigue.

Further uses of the instrument which seem promising include distinguishing between psychosomatic and neurophysical pathology; psycho-neuro research; examination for the effects of encephalitis; diagnosis of multiple sclerosis; correlation with electroencephalograms.

Basic research of the pupillography technique used in the instrument was done by Otto Lowenstein, M.D. and Irene E. Lowenfield, Ph.D. at the department of ophthalmology, Columbia University College of Physicians and Surgeons, and the Institute of Ophthalmology, Presbyterian Hospital in New York.

Development of the Program for the Visually Handicapped in Oregon in Relation to Public Schools

WALTER R. DRY

Former Director
Oregon State School for the Blind, Salem

Many state agencies have cooperated in providing educational facilities in line with modern standards and techniques.*

EDUCATION of the visually handicapped in Oregon began when the Oregon State School for the Blind was opened in Salem in 1873, the Legislature of 1872 having appropriated "\$5,000 in gold for the education of the blind." By 1939 the residential school in Salem was still the only organization serving the visually handicapped children of the state with the exception of two so-called sight-saving classes in Portland with about 25 pupils.

A bill was introduced in the 1939 legislature authorizing public school districts to operate special classes for handicapped children and providing for reimbursement from state funds for incurred expenses. Up-state legislators were quick to point out that as the bill was drawn only large city school districts could derive benefits, and, since Portland was Oregon's only large city, the bill was defeated.

During the next two years many, many conferences were held. Participating in these were the state super-

intendent of public instruction, the superintendent of schools in Portland, representatives from the State System of Higher Education, the State Board of Health, the County Health Units, many of the superintendents of Oregon's lesser cities, and the superintendents of the State School for the Blind and the State School for the Deaf; in fact, representatives of all agencies interested in education, health and welfare of handicapped children.

Handicapped Children's Act

From these discussions and exchanges of opinion came not only the present Handicapped Children's Act of 1941, but a respect for each other's point of view and an understanding of each other's problems which created the fine spirit of cooperation which has become the outstanding characteristic of Oregon's program for her handicapped children. Among other provisions the act defined handicapped children; fixed responsibility for their education, and made provision for same; directed the state superintendent of public instruction to make a spot survey to determine

* Presented at the Oregon Conference on Vision Conservation, Portland, October 25, 1960.

the approximate number of handicapped children, and made appropriation for such survey.

One of the most significant provisions of the Act is found in Section IV: ". . . the Superintendent of Public Instruction shall cooperate with existing agencies, such as the State Child Guidance Clinic, the State Board of Health, the Oregon State School for the Blind, the Oregon State School for the Deaf . . . or other agencies concerned with the welfare and health of handicapped children: to coordinate their educational activities in the interest of handicapped children; and these agencies are hereby empowered to cooperate in this program; . . ."

Finding the Children

Dr. Vern D. Bain, assistant to the state superintendent of public instruction, who had participated in the many conferences previously mentioned and had acquired an interest in and an understanding of the problems of handicapped children was charged with making the survey. Ten representative counties over the state were selected for study, and the agencies listed above (Section IV of the Act) were asked to help.

The handicaps were classified as follows: blind and partially seeing; crippled; deaf and hard of hearing; low vitality, heart cases, etc.; and children with speech defects. The Act specifically excluded the low mentality group, which was to be dealt with in future legislation.

Appropriation of Funds

In the group of blind and partially seeing some 5,000 vision screenings were done and reported on. For many

years the Oregon State School for the Blind in Salem had enjoyed fine co-operation with public schools throughout the state. A start had been made in demonstrating that under proper conditions totally blind children could be educated in public schools, even outside the large city districts. When the results of the survey were presented to the 1943 legislature with request for funds to carry on the program for handicapped children, this fact proved to be a considerable help in convincing legislators from up-state, who had defeated the 1939 legislation, that such a program would help their areas also, and was not designed solely to serve Portland.

In 1943 the legislature appropriated funds and provided that school districts carrying on programs for education of children with visual and other handicaps could be reimbursed from state funds up to one and one-half times their per capita cost for any excess expenditure resulting from such programs.

Appointment of Supervisor

At the start it was obvious that the person selected to head the statewide program for the visually handicapped must know the problems and techniques in the field; have some knowledge of the public schools throughout the state; know the work and resources of the residential school for the blind, and be in sympathy with its aims and its policy. As a consequence, and in line with Section IV, Mrs. Ethel Nestell Fortner was chosen. She had taught in public schools, and in the Oregon State School since 1932, had been principal there for several years, had attended most of the conferences in 1939 and

1940, and had helped with the survey. She was named state supervisor of the education of visually handicapped and staff consultant for the Oregon State School for the Blind. In order better to coordinate the work and avoid duplication of effort the supervisor is employed jointly by the State Department of Public Instruction and the Oregon State School for the Blind.

If there is one word that best describes the development of this program that word is *co-operation*. Visually handicapped children pass freely from the residential school to their home public schools; from their home public schools to the residential school; and back again to their home public schools. The best education for the individual visually handicapped child is always a more important consideration than *where* or *how* he receives it.

TRACHOMA AMONG U.S. INDIANS

Trachoma is still a common affliction among the Indians in the southwestern United States, according to a report by Drs. John C. Cobb and Chandler R. Dawson in the *Journal of the American Medical Association* for February 4. Their findings are based on surveys conducted since 1957 among four Pueblo tribes and Navaho school children in New Mexico and Arizona.

Whenever possible an announcement was made by the community worker or public health nurse in each community several weeks prior to the survey. Educational materials were sent home with school children and a motion picture was shown to stimulate interest in the trachoma control

program. In each village almost all children of school age were examined, but the adults who appeared at the clinics represented a distinct minority of the adult population. It is possible that a bias may have resulted from the tendency of adults with eye trouble to come in for examination in greater numbers than those who had no eye complaints.

About 15 per cent of the 2,522 Pueblo Indians examined had trachoma. The disease was limited almost entirely to adults.

Among the Navahos 23 per cent of the 1,126 young school children examined had the disease, and about 18 per cent of the adolescents, an indication that this tribe is heavily infected. At one boarding school on the reservation nine cases were found among the 134 pupils, and two weeks later 22 new cases appeared. It was discovered that the school's water supply was inadequate and the children were using common wash water. In marked contrast to this no new cases were found in four dormitories surveyed at the end of the term in a Navaho boarding school where hygienic standards were well maintained even though about 20 per cent of the children had active trachoma and had not been treated for the first four months of the school year.

The Navahos live in crowded quarters with little water and are exposed to a windy, dusty environment conducive to the spread of trachoma. It is probable that as their living conditions are improved the disease will gradually disappear. Meanwhile, the division of Indian health of the U.S. Public Health Service is engaged in a control program of education, early diagnosis and treatment.

Services for the Visually Handicapped in the Portland School Program

MADGE LESLIE

Consultant for Visually Handicapped Children
Portland Public Schools, Oregon

Each child must be helped not only to know his limitations,
but to make the very best use of his capabilities.*

THE philosophy of education of handicapped children has undergone considerable change in the past ten to fifteen years. Surely that of the visually handicapped has changed since the first myope classes were begun in England in 1908 with their motto: "Reading and writing shall not enter here!" Today we have available better medical information, better-trained teachers, more resources, good lighting, books with large print, and other improved equipment.

It is considered best wherever possible for the children to live at home and attend school; and since this is in accord with the almost universal desire of parents an itinerant program for blind and partially seeing children has been developed in Portland.

Our city has two programs for visually handicapped children: the regional facility for the blind which serves an area in Multnomah, Clackamas, and Washington Counties within a radius of about 15 miles from the Child Service Center; and the program for partially seeing within District No. 1. Both are administered by

the Portland Public Schools, but the regional facility for the blind is a co-operative project with the State Department of Education, and the State School for the Blind.

After a child is referred in preschool years by physician, optometrist, nurse, parent, relative, or friend contact is made with the home by the preschool counselor, Mrs. Laura Zetsche, a skilled social worker on the staff of the regional facility for the blind. At school age the child may be referred by the same sources, by members of the school staff, or he may be discovered during the fall vision screening.

The child who is visually handicapped is first of all a child. He has the same needs as other children: for love, for security, for feelings of adequacy, and for self-respect, and these must be considered in planning his education.

Vision Screening

Vision screening, using the Snellen chart plus teacher observation, is conducted by the teachers during the first few weeks of the fall term. We have always been aware of the tremendous value of the services of the public school nurse; but this year it has been brought home to us much more force-

* Presented at the Oregon Conference on Vision Conservation, Portland, October 25, 1960.

fully because we are doing the re-screening that the nurses have always done. It appears that it may take our two teachers about five months to re-screen the seven to eight thousand children who are referred. Each year about 35 or 40 of them are eligible for our special services if needed, but of course not all require direct teacher service.

Consultant's Observation

Careful planning is of the utmost importance. As soon as possible after a partially seeing child of school age is referred the consultant makes an appointment to observe in the classroom, usually with one of the itinerant teachers. Without the child's knowledge they quietly observe how he uses his eyes at close tasks; whether his writing is up to standard; whether he is free to move nearer to the board if necessary; whether he enters into activities on the playground, and how. His coordination at play and at work is studied.

If it seems that the child may need special help an eye medical examination report form is sent to the parent with a letter of explanation. This report gives us a basis for planning, and satisfies state requirements for certification. Copies are sent to the nurse and to the school principal.

A conference is held at the school to determine whether the help of the itinerant teacher is needed, and if equipment such as an optical aid or adjustable desk is required. Sometimes a few minor adjustments in the classroom are sufficient. The child with a reading problem is referred, with interpretation, to the remedial reading teacher.

The itinerant teacher supplements

and enriches the work of the regular classroom. She is a resource person who helps the child make the best possible use of his vision and function at the highest level of his ability. With the classroom teacher she works out the best program for him, modifying and changing it as needed. Conferences are held as often as necessary.

The child with seriously limited vision, and his parents as well, may need help in recognizing that much information about his surroundings can be obtained by using other senses; listening, exploring tactually, and smelling. When the child is being oriented to his school he will have to use all his faculties in learning to get about successfully; to be alert for landmarks such as the drinking fountain, patches of color which may be display boards, heat which may indicate ventilators, odors that come from the cafeteria, the sound of the typewriter or telephone that may indicate the office, or a rush of cold air that may mean the doors to the outside.

Sometimes we do not realize what children are missing. One little youngster knew a certain article was a fish bowl and that there were fish in it, but when he put his hand in the bowl he was surprised to find that it contained water. His experiences were immediately broadened.

A little girl was given the broom to help during clean-up time but did not know where to put it after completing her little chore. She wanted to share in the classroom tasks but she needed help. She needed to learn when to ask for it without embarrassment.

Children with Multiple Handicaps

Services for children with multiple handicaps are sometimes needed. We

have been working at Holladay Center for Crippled Children with two pupils who have severe vision problems. One little boy with a shock of red hair and an always-sunny smile has changed in two years from not walking to taking a few steps; from not talking to being almost impudent—to the delight of the teaching principal and the itinerant teacher. The teacher is experimenting with him to find out how much contrast is needed between the paper and the lines on it; and what size type he needs. He knows his colors quite well.

Most of the day the child with a vision handicap is in the regular classroom, where he is expected to do the best quality of work of which he is capable, learning from and with his peers.

Evaluation of Progress

Several times during the year the child may be included in an evaluation of his progress. He should help determine his goals and his needs. In high school this may be especially necessary. Good counseling all through the elementary grades should result in his facing the future realistically.

Among the rather typical students is Johnny L., now in grade four. When referred in March 1957 his eye report showed congenital myopia, severe progressive choroidal degeneration, and esotropia. Without glasses he could see fingers at three feet; with glasses his distance vision was 20/60 left eye, and 20/40 right eye. It was recommended that he avoid any rough-and-tumble activities since there was danger of retinal detachment. Use of his eyes was not necessarily limited, but there was to be no special study work.

The psychological examination, grade two, showed the child to be very superior on the Wechsler scale in both verbal and non-verbal areas. Special services were started three times a week, after a conference with the classroom teacher who felt that Johnny was nervous and insecure. The itinerant teacher worked with him on reading and creative writing, and together they made a scrap-book on health. The mother felt the boy's attitude toward learning and school in general improved during the year. Early in the third grade the itinerant teacher worked with him on a science booklet. He showed much interest in this and at the end of the year his reading comprehension was above eighth grade level. It was noted that the boy was very capable but not consistent in working up to his ability. Social adjustment and emotional control showed improvement.

Last fall observation and a conference with the teacher revealed that Johnny is a brilliant little boy who will undoubtedly benefit greatly from an enrichment program and assistance in developing better work habits.

The goals for each child, including the visually handicapped, should be high. Each must be helped to know his limitations, to do the things that will give him a greater degree of satisfaction and help him to become a contributing member of the group.

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Program Needs of Visually Handicapped Children in Oregon

RAYMOND S. MYERS

Consultant, The Education of Visually Handicapped Children
Oregon State Department of Education
Field Representative, Oregon State School for the Blind

As the demand for special facilities for these children increases, it is important to see that they are planned in accordance with current educational philosophy.*

TO AVOID confusion concerning the children about whom I am talking and about my use of the terms "visually handicapped" and "partially seeing," I should like briefly to define them for you. The terms visually handicapped or partially seeing apply to any child whose visual acuity is 20/70 or less in the better eye after all medical or surgical treatment has been given and compensating lenses have been provided when necessary. These children must, however, be able to use their residual vision as their main avenue of learning. They must also be able to benefit from temporary or permanent use of special facilities and be recommended for such a program by both eye and educational specialists.

Nationally, we are now experiencing a rapid expansion of educational facilities for the visually handicapped. In the early 1900's there was a surge of national interest in providing such services and, as a result, many so-called sight-saving or sight-conservation classrooms were organized. Most of these special classes for

partially seeing children were in the larger metropolitan school districts. Portland was no exception; its first special classroom for partially seeing children was started in 1931.

Since this period of early expansion there has been a slow but steady improvement in the physical features of the average classroom. Subsequent developments in building design and technology made adequate lighting possible in all classrooms instead of only a few special rooms, and adjustable furniture was designed to meet the needs of the individual child. Perhaps a more significant change, however, occurred in the philosophy of education of partially seeing children. Professional educators, particularly in the elementary field, were developing a more child-centered curriculum. More and more children were attending our schools, and they brought with them a multitude of special problems and needs which the school had to accommodate.

Gradually, as time brought about changes in educational philosophy and facilities, visually handicapped children in increasingly large numbers were included with their seeing peers

* Presented at the Oregon Conference on Vision Conservation, Portland, October 25, 1960.

in the regular classroom program. Modern educational philosophy continues to change. Educators are adapting their educational programs to meet the special academic, physical, and emotional needs of all children.

In Oregon we believe that the visually handicapped child should be educated in his home community with his seeing peers whenever possible. The Special Education Section of the State Department of Education provides consultant services, special equipment, large-print and recorded textbook materials, and reader service to enable the visually handicapped child to benefit from the regular school program. In addition, the Portland Public Schools and the Multnomah County school office co-operate with the State Department of Education in providing the services of specially trained itinerant teachers to furnish supplementary individual instruction to visually handicapped children and to assist the regular classroom teachers in adapting the educational program to suit the individual requirements of these children.

The Oregon State School for the Blind in Salem provides a very excellent residential-type academic and recreational program for those visually handicapped children who cannot benefit from the local school program because of environmental, physical, and/or emotional circumstances beyond their control. The Oregon State School for the Blind, the State Department of Education, the local school district, and the child's parents work together to arrange the most satisfactory educational program.

During the early 1940's there was a lull in the expansion of educational

facilities for the visually handicapped child. However, the sudden tragic increase in the number of premature babies who developed retrorenal fibroplasia created a need for additional educational facilities. Many residential schools for the blind were soon overcrowded and understaffed. Public school programs of various types were organized to meet the challenge of providing sound academic programs for these children. Fortunately, medical researchers discovered that this dreaded affliction could be prevented through control of the amount of oxygen administered to premature babies. The National Society is to be congratulated for its encouragement and support of medical research which eventually led to the prevention of this calamitous affliction. Happily, since 1953 there has been a marked reduction in the incidence of blindness among premature children, due to retrorenal fibroplasia. Now that this national crisis is on the decline, educational and medical facilities originally established to serve blind children are expanding their programs to aid more and more partially seeing children. Much greater emphasis is being placed upon identifying the partially seeing child and providing the necessary aids which will enable him to benefit from the regular school program.

Oregonians can be proud of their achievements in providing sound educational, medical, and rehabilitation services to visually handicapped children. The Oregon State School for the Blind is one of the most modern residential schools in the country and has long been providing a special education program for visually handicapped children. We have an out-

standing ophthalmological clinic under the direction of Dr. Kenneth Swan at the University of Oregon Medical School here in Portland. The Oregon Commission for the Blind is continually expanding its program of rehabilitation. Local and statewide civic organizations such as the Lions, Lions Auxiliary, Elks, Kiwanis, and many others have faithfully provided assistance to visually handicapped children and adults whenever and wherever it was needed. Portland Public Schools and Multnomah County Schools have been quick to respond to the special educational needs of visually handicapped children. The interest of Oregonians in the education and welfare of their visually handicapped children is exemplified in the organization of these first class services.

In spite of the great progress we have made in our programs for visually handicapped children, there are still many things that should be done to further improve the extent and quality of our services. I should like to call your attention to a few of these problems and possibly suggest what might be done to remedy the situation.

Mass Screening

If we are going to provide adequate educational services to local school districts, we will have to face certain problems squarely and adjust our programs accordingly. Our first important need is improvement in our mass screening procedures. Recent incidence figures released by the National Society for the Prevention of Blindness show that there is approximately one seriously visually handicapped child for every 500

pupils. According to this estimate, Oregon has 750 visually handicapped children attending public schools. At the present time, only about 400 of these children are receiving special educational assistance through established programs. What about the other 350 children? I can draw only two conclusions. Either Oregon is very fortunate in having so few who are partially seeing, or these children are somehow being overlooked by our present screening procedures. Research has indicated that the Snellen test used in Oregon in combination with teacher observation compares very favorably with the findings of the most elaborate instruments in identifying children needing eye care. We must, therefore, work towards helping our classroom teachers and, in some instances, parent organizations to understand the symptoms of eye trouble and to become more skilled in administering the Snellen test.

As a possible help in solving this problem, I suggest that the State Department of Education and the State Board of Health co-sponsor one- or two-day training clinics, to be held once each year, possibly during the summer sessions, at each of the teacher training institutions in Oregon. Classroom teachers would be given instruction and demonstrations in the proper use of the Snellen test. Pamphlets providing information about the symptoms of eye trouble could be distributed and displays used to stress the need for adequate medical attention. Such a program might also function as part of a mobile glaucoma detection unit, visiting most areas of the state.

There is also a need to continue the

vision screening program through high school instead of discontinuing it at the end of the eighth grade as some schools are doing. Numerous children who need assistance at this time are often overlooked. The vision screening program should be conducted as part of a complete health unit which would also include eye hygiene and safety. The National Society is encouraging further curriculum developments along these lines and is providing resource materials to assist the classroom teacher in presenting an integrated program of eye health and safety.

Regional Programs

Our second important need is for additional regional educational programs. Because of the wide distribution of our rather small population and the low incidence of visually handicapped children, such programs would, in most instances, include several school districts or even counties. They should be staffed by qualified teachers who would coordinate the consultant, itinerant teaching, and referral services as needed. Some of our larger districts could provide a full-time itinerant teacher who would serve the children within their home districts. Several county education offices are considering services of this type; Multnomah County is already providing them. State funds to pay part of the cost of approved programs are available from the State Department of Education.

The third need may not be as urgent; however, the recent success of optical aids clinics prompts me to mention them. The National Society is currently completing arrangements

for gathering data and dispensing information on optical aids, both to professional groups and to the public. I understand that the Federal government, through the office of Vocational Rehabilitation, has assisted in establishing a number of pilot programs to encourage the development of low vision aids clinics. Is there not a need for an optical aids clinic in Oregon? A facility of this type, if located in the Portland area, could serve residents of parts of Washington and Idaho as well as Oregon. Estimates of the percentage of partially seeing children who could be helped by such a facility vary considerably; however, a number of these clinics report that they have been able to improve the visual acuity of as many as fifty percent of their patients.

Educational Research

The fourth need is additional educational research. Many questions about the kinds of services required to meet the needs of these children are being asked throughout the country. We know, of course, that the situations vary widely and that simple solutions to these questions do not exist; but we need to know how the needs of the visually handicapped child can best be filled, what special equipment he needs, who should provide the services, and how the regular classroom teacher can best be supported in her efforts to teach a visually handicapped child. These are only a few of the many questions that need to be answered.

Preschool Vision Screening

A sound preschool vision screening program is our fifth need, and one that is well-recognized by eye special-

ists. In an effort to stimulate some thinking along this line, I should like to make the following suggestions:

1. The cooperating members of the Advisory Committee on Vision Conservation should outline a proposed program including purposes, community organization, administration procedures, and a list of agencies willing to provide professional assistance. A list of speakers, and possibly a portable display unit, should be made available to local groups interested in promoting such a program. Presentations or displays could be provided for the annual state conventions of the PTA, Lions Auxiliary, Delta Gamma, and other civic-minded groups in an effort to acquaint them with the present problems and encourage them to establish a preschool vision screening program.

2. Local well-baby clinics could provide preschool vision screening services.

3. All children could be required to have a test of visual acuity as a part of their regular preschool physical examination, and parents should be encouraged to request such an eye examination when they visit their family physician.

Cooperation of Professional Groups

Our sixth need here in Oregon, and one that applies to the nation, is to have the ophthalmologists and the optometrists somehow resolve many of the differences which exist between them. It is exceedingly difficult for community groups to promote effective vision screening and eye health programs as long as these differences continue to exist. I was pleased to hear Doctor Swan's report on the

increased number of ophthalmologists practicing in Oregon and the number of doctors at the University of Oregon Medical School who are presently working towards specialization in this field. In spite of these increases and in spite of our rapidly growing population, Oregon does not have a sufficient number of medical eye specialists to provide adequate services. In some areas it is often necessary to wait for as long as three months for an ophthalmological examination.

A survey of referrals made on the basis of school vision screening programs indicated that almost 50 percent of the children referred for a more complete eye examination were seen by optometrists. Optometrists are providing a valuable service, and there is little doubt that they are needed; but the differences which exist between these two professional groups are undoubtedly hampering progress in the development of a sound program of eye care and treatment for all. This is a paramount problem. We already have a liaison committee between the Oregon Congress of Optometry and the Oregon Academy of Ophthalmology and Otolaryngology. I challenge this committee to get busy and work toward resolving these differences. The members of this committee should be encouraged to look to other areas of our country to see what has already been done to resolve this problem. Perhaps there is something that can be done on a national level by the National Society which will hasten the solution to this problem.

The seventh and final need is a meeting, such as this conference, held annually or at least biennially, to acquaint ourselves with the services

available from other agencies. It is important that we get together periodically to exchange ideas, to learn about recent medical developments and research, and to have an opportunity to discuss our common problems.

There is always the question of financing, and I hope that private and federal agencies will become more generous in providing funds as well as leadership for such programs.

TV EFFECT ON CHILDREN'S EYES

A study of more than 1,000 British children revealed that there is no basis for assuming prolonged television viewing is responsible for causing refractive errors in youngsters. The *British Medical Journal* reports that the number of cases of myopia did not appear to increase as the number of viewing hours rose.

INTERNATIONAL EYE BANK

Medico, Inc., founded by the late Dr. Thomas A. Dooley, has established an international eye bank with headquarters in Washington, D. C., reports *AMA News*. The new eye bank will serve as a clearing house for shipping corneal tissue throughout the world.

Dr. Dooley, who died last January, donated his own eyes to the Eye Bank for Sight Restoration in New York City.

TEACHING OPPORTUNITY

Van Dyke Elementary Schools, Warren, Michigan, have a position open for a teacher of partially seeing children for the next school year.

Inquiries should be addressed to Mrs. Marjorie Carlson, director of elementary education, 13173 Toffer Avenue, Warren, Michigan.

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G-DAY IN MILWAUKEE

LAWRENCE L. GARNER, M.D., F.A.C.S.

Assistant Clinical Professor of Ophthalmology
and Director, Glaucoma Consultation and Referral Center
Marquette University School of Medicine
Ophthalmologist, Veterans Administration Regional Office.

ELIZABETH DRESSLER

Executive Director
Wisconsin Society for the Prevention of Blindness, Milwaukee

Widespread public ignorance of glaucoma as a blinding disease, and the educational value of a mass screening project, are revealed in this report.

A COMMUNITY-WIDE program for glaucoma detection was sponsored on May 14, 1960 by the Medical Society of Milwaukee County and the Milwaukee Oto-Ophthalmic Society under the direction of the Wisconsin Society for the Prevention of Blindness and in cooperation with the Milwaukee Health Department. Valuable assistance in planning and carrying out the project was given by members of the staff of the National Society for the Prevention of Blindness.

The public screening was conducted in the new Municipal Building quarters of the Milwaukee Health Department where facilities were found to be unusually good for this type of survey.

The objectives were: to alert the public to the meaning and danger of glaucoma; to alert the medical profession to the importance of testing for the disease in all adults over age 35; to determine how many could be screened during a single day; and to find the number with unsuspected glaucoma in this group.

It is our hope that routine tonometry will become a requirement in most

medical offices, particularly those of the ophthalmologists; and that the adult public will eventually request the test as a routine part of the physical examination. Only if this practice is generally accepted can we hope to reduce blindness from glaucoma. The disease is not preventable, but we know that much of the blindness that results from it is preventable if there is an early diagnosis and proper continuous treatment.

Surveys made in other states show the presence of unrecognized glaucoma to average about two per cent of those tested. This means that one out of every 50 adults is slowly going blind, oblivious to this condition.

Choice of Site Important

The site for such a program should be selected carefully since accessibility and ease of parking are of prime importance. Dr. Edward Krumbiegel, Milwaukee health commissioner, and clinical professor and chairman, department of public health, Marquette University School of Medicine, generously offered his cooperation, the use of the Health Department facil-

ties, and the assistance of members of his general and nursing staff. A Saturday was chosen because the building is not used on that day. The area could be arranged the evening before, and volunteers could become acquainted with the floor plan and the procedures. From the standpoint of efficiency the physical plant was almost an ideal one; parking restrictions were eased for this day by the Milwaukee Police Department and several extra policemen were stationed in and about the building to assist in handling any problems that might arise.

Extensive Advance Publicity

The Medical Society of Milwaukee County not only approved the project and made available the professional personnel and resources but launched a most effective advance publicity program through newspapers, radio and television. The Society's *Times* carried an announcement in its spring issue, and this was mailed to over a thousand industrial nurses, hospitals, schools, libraries, editors, community leaders, and service organizations. The Society obtained the use of the lighted sign on City Hall, which read, "Glaucoma Detection Day—May 14, 1960." It also contributed badges for the volunteers, and many other services such as photography and printing of registration blanks.

Dr. Krumbiegel arranged to have flyer announcements sent to 9,000 city employees via pay envelopes.

Attendance Exceeds Estimate

It happened that the Milwaukee Braves were playing their first home game of the season on G-Day, and it was thought that this might affect the attendance at the screening. How-

ever, by 9:00 A.M., the hour scheduled for opening, more than 300 persons were waiting, and soon a line extended to the outdoor area for a distance of half a city block. Fortunately, the weather was fine.

At no time during the day did the pressure relax. Despite the crowd and the long wait in the large foyer that served as a waiting and registration area, there was never any great evidence of irritation or impatience. Because of the many early arrivals and the resulting congestion it was necessary to abandon our original plan of having volunteers register each screenee. Instead registration blanks were passed out to all comers who filled them in personally; they were then called by numbers hastily added to the blanks. Registrars also acted as traffic directors and answered the many questions that arose.

A total of 1,750 blanks was distributed. Hundreds of persons were turned away when it became obvious by 2:30 P.M. that it would take two hours or more to screen those already registered and waiting. Tiring personnel and dwindling supplies contributed to the early closing of doors. By 4:45 a total of 1,451 adults had been screened.

Test Procedure

Tests for visual acuity were given by lay volunteers on screening instruments arranged along one wall of the foyer. Three of these devices were supplied by American Optical Company and six by Titmus Optical Company. Patients were then sent to one of six examining rooms, each having two tables manned by one or two volunteer ophthalmologists, with one nurse and one recorder to assist. After the tension had been taken and

recorded the patient was directed to an adjoining room where the results of the test were discussed and pertinent literature was distributed by one of the volunteer registered nurses. Guides were stationed in strategic places to expedite traffic flow and usher patients from the building.

Twenty-two volunteer ophthalmologists from the Milwaukee Oto-Ophthalmic Society took charge of servicing the 12 tables, which were placed two in a room. The physicians were assisted by a corps of 20 public health nurses recruited from the Milwaukee Health Department and one from the nursing division of the Veterans Administration regional office. Special instruction sheets were made up for the nurses and they were briefed prior to the screening.

Standard Schiøtz tonometers were employed; the footplates were cleaned with ether wipe before and after each test. Dorsicaine and ophthaine were the anesthetics used. No reactions were reported. All patients were warned not to rub their eyes for one hour after the test.

Further investigation was indicated in any patient with an intraocular pressure reading of 25 mm. Hg or over (Schiøtz 1956). These patients were given a yellow card noting the pressure reading and were advised to present it to an ophthalmologist of their choice for check tension test and more definitive workup if necessary. Following this the yellow card was to be returned to the glaucoma detection program committee for future analysis. Patients without an ophthalmologist were referred to the physicians' service of the Medical Society of Milwaukee County for names of those whom they might consult.

Results of the Screening

Criteria for a positive diagnosis of glaucoma were: elevations of intraocular pressure to 25 mm. Hg or over, with at least one of the following: glaucomatous cupping of the optic nerve head; visual defect of the nerve fibre bundle type; facility of outflow impairment below the normal range; a positive water provocative test combined with tonography.

All ophthalmologists were urged by letter, as well as in an article in the Milwaukee Medical Society's *Times*, to use the facilities of the Glaucoma Consultation and Referral Center at Marquette University School of Medicine for definitive and special diagnostic tests, including tonography studies where diagnosis was questionable.

Among the 1,451 screenees we found 109 glaucoma suspects, of whom 11 were or had been under treatment for the disease. Among the remaining 98 we found 34.69 positive cases of previously undiagnosed glaucoma. This represents 2.34 per cent of those tested, and compares closely with the national average. This finding warrants serious consideration by every adult and every physician, for the latter are not immune.

The largest number of screenees were in the 51-60 age group; the highest number of suspects were age 61-70.

A family history of glaucoma was noted in 104 of the 1,451 tested, an incidence of 7.16 per cent. This is rather high and suggests that all members of such a family, of age 30 or over, should have a repeat tension test by a physician at yearly intervals.

Of the 1,451 tested 342 were found to have vision of 20/50 or less (to

20/200) in one or both eyes. This 24 per cent represents a rather high incidence of impaired vision in an adult group in the upper age bracket.

Of the testees 1,345, or 93 per cent, stated that they needed glasses for distance or near vision. Since these people do require periodic eye examinations it would be desirable to have the glaucoma test performed at the same time, thus eliminating the need for screening. Many of them were not aware of a difference of visual acuity in their two eyes and found this knowledge a stimulus to seek examination for improvement if possible.

The incidence of glaucoma increases with advancing years up to age 70 when it appears to decrease, but this is relative since fewer persons reach this age group.

Conclusions and Suggestions

The primary value of a glaucoma screening program of this type is educational, both for the public and for the physician. The statistics derived from our project and others in various parts of the country present the problem in convincing terms. The ultimate aim is that the patient will expect and if necessary request a tension test during a general physical examination; and that each physician will make tonometry a routine procedure.

Several suggestions can be made for the benefit of those contemplating such projects. Most important is the need for adequate personnel; it is better to have more volunteers than needed and to release them or use them as replacements than to be short-handed. Without the 130 volunteers who served so efficiently in our program it could not possibly have been the success that it was.

It is very important to regulate the flow of screenees into the area, otherwise confusion results. Registration should start at least one hour before the time announced for the start of screening. Because we failed to lock the door to the screening area the early candidates crowded in, making proper registration impossible.

The success of the screening program was evident in the number of phone calls to the physicians' service of our Medical Society. On the following Monday alone the service received and processed 150 calls for referral to an ophthalmologist.

While many citizens have become aware of glaucoma through the screening, there is great need for a continuous distribution of literature or information on the subject. Since G-Day one of the authors (LLG) has routinely questioned all adults seen at the Veterans Administration regional office of Milwaukee as to a possible family history of glaucoma. They are then asked, "Do you know what glaucoma is?" The replies indicate that less than one per cent have the faintest notion of the disease. As a matter of fact, the few who think they know, usually reply, "It's cancer, isn't it?"

This suggests that glaucoma detection programs have much to offer from an educational standpoint, particularly if held in the larger communities of the state. Many of our screenees came from areas outside of Milwaukee, one from as far off as Superior, Wisconsin.

These programs can be arranged with the assistance of the National Society for the Prevention of Blindness, but the local ophthalmologists must be the moving force behind them. The results are most rewarding

in the grateful response of patients who are diagnosed in an early stage of glaucoma and, by the prompt institution of proper care, are spared the fate of going blind.

What is difficult to explain is the number of suspects who have deliberately avoided an ophthalmological examination or procrastinated in seeking one. All referral cards were to be returned by the ophthalmologists after examinations confirmed or refuted our findings. At the end of 60 days only 50 per cent of the cards had been returned and personal follow-up became necessary. Telephone calls were made to the suspects living in the area; letters were sent to those outside of Milwaukee County. Response was prompt from the out-of-town group. The local residents gave some rather interesting responses. Eleven stated that they had not bothered to have our findings confirmed or checked. "I didn't think it was important enough," or "I will do it soon," or "I would rather not find out," or "I feel fine, nothing is wrong with me" were some of the responses given by these suspects.

Two of those contacted stated that they had taken the card to an eye specialist but he "never took my pressure, he sold me a new pair of glasses." Both of these physicians personally verified this statement. They were then offered the facilities of the Glaucoma Center for consultation and both signified they would use them. Only one, however, has done so. The patient revealed the classical signs of outflow impairment with a decided positive water provocative test. We hope to have the nursing staff of the Milwaukee Health Department continue follow-up studies.

DICTIONARY IN LARGE TYPE

A copy of the latest large type edition of the Winston Dictionary for Schools has been presented to the library of the National Society for the Prevention of Blindness in memory of its late associate director, Winifred Hathaway. Mrs. Hathaway is internationally known as a pioneer in the education of partially seeing children.

In presenting this gift J. Knox Milligan, of Stanwix House, the publishers, recalled that the very first copy of the first edition of this large-type dictionary, handbound, was given to Mrs. Hathaway at the 1946 annual conference of the National Society.

"I trust that you will appropriately file the worn copy that you now have," he said. "We believe this printing to be the best yet produced of this important reference work. In addition to revision of the content, many imperfections have been removed."

Inquiries regarding the new edition of the dictionary and other publications in the field of education of the partially seeing may be addressed to Mr. Milligan at Stanwix House, 3020 Chartiers Avenue, Pittsburgh 4.

Editor's Note: The foregoing article on G-Day in Milwaukee is a digest of a much more comprehensive report that has been prepared by Dr. Garner, Dr. Krumbiegel and Mrs. Dressler. The authors are continuing their studies of the screening results and additional valuable data will be available. Further information may be obtained from Dr. Garner at the Glaucoma Consultation and Referral Center, 545 North Fifteenth Street, Milwaukee 3, Wisconsin.

CHAMPAIGN STUDY of the PARTIALLY SEEING

MERLE B. KARNES

Director, Department of Special Education
Champaign Community Schools, Illinois

A unique investigation will attempt to determine whether current special education methods really help these children to realize their mental capabilities.

THE research that has so far been conducted on partially seeing children has related almost exclusively to medical and optical problems. Few, if any, studies have been made of the children themselves and the effect on them of the educational programs that are designed to meet their special needs.

There have been no longitudinal studies on the achievement of the partially seeing. Can we be sure that providing special equipment and media such as large-print books really enables these children to follow the regular school curriculum and achieve at an academic level commensurate with their mental ability? We who have programs for the partially seeing have been concerned about some who, given these special facilities and taught by methods used with normal children, still have difficulty in keeping up to this level.

Do all partially seeing pupils respond to the methods and techniques that are effective with children who do not have vision impairments? In our planning have we involved the many disciplines that might contribute to a better understanding of each child? It appears that the eye specialist and the special teacher have had a major share of the responsibility. In many programs the only time a psychologist

sees a child is when mental retardation seems apparent. In these cases intellectual assessment has been the primary function of the psychologist, although a qualified psychological examiner has much more to offer than the limited service of declaring the child intellectually eligible for a program.

The trend is for more and more integration with normal children. This philosophy appears to be excellent but how well are these children accepted by their peers with normal vision? How does the partially seeing child perceive his peers, teachers, and parents? How does he feel about himself?

Champaign Study

The staff of the Champaign Department of Special Services is vitally interested in finding the answers to these and many other questions through a research project which, hopefully, will be initiated in the fall of 1961. The results of this study should enable us to meet the needs of partially seeing children more adequately. It undoubtedly will point up many problems and areas that will need further study.

The general question which we hope to answer is: Can a complete differential diagnosis of each partially seeing child, using a team approach, enable

the staff to prescribe an educational program and services to meet individual needs and to foster optimum development? Champaign is particularly interested in diagnosing learning problems especially in the area of reading.

Five-Year Period

Our intensive longitudinal study in Champaign will involve approximately 20 children in grades one through twelve who have been seen by an eye specialist and whose visual impairments place them within the classification of the partially seeing. They will be followed over a five-year period. The Illinois criteria will be used to determine ocular eligibility. All the children included will have been declared intellectually eligible by a qualified psychological examiner.

A complete differential diagnosis of each child will be made. The team will include a psychological examiner, social worker, principal, special teachers, regular teachers, speech clinician, vocational counselor, director of special services, eye specialist, and pediatrician.

Case Conferences

After the data have been gathered by the team a case conference on each child will be held. Pertinent information will be shared and recommendations and decisions made in an attempt to meet individual needs and thus enable each child to achieve on a par with his intellectual ability.

The treatment may include any one or all of the following: special methods and techniques of instruction in areas of weakness; special equipment and materials of instruction; social case work; speech therapy; vocational

guidance; counseling of parents regarding problems of the child or referral to a clinic; integration of child in regular class in specific areas; referral for medical treatment.

Group therapy will be conducted with the parents to develop greater understanding of these handicapped children, and to improve child rearing practices.

The special teachers will keep weekly logs of their work with each child and detailed structured progress reports will be written periodically. The data will be analyzed statistically, and objective and qualitative data will be included in each case study.

Partially seeing children are such a heterogeneous group that it is very difficult to match them and use a contrast and control group. It would be almost impossible to match them on eye anomalies. To match them considering a number of variables would entail many researchers and it would be necessary to locate these children in a large number of communities. The cost would be prohibitive and the end results do not appear to warrant the expenditure. Hence, our project uses a case study approach in which each subject serves as his own control. This is a legitimate scientific method, especially in a longitudinal study.

Justification for Program

It is felt by the Champaign staff that if data were available to reinforce our belief that partially seeing children can be helped to work at a level commensurate with their mental ability administrators, regular teachers, nurses, doctors, and parents would be more eager to refer these children for special services. Currently we have no scientific proof that they really profit

from being in the program. If we do not gather scientific data to prove its worth, then we can anticipate that it will lose standing and ultimately may be eliminated. Taxpayers are becoming more critical of educational methods. Facts, not opinions, are the best argument to use in the support of any program.

SUMMER COURSES—1961

The following universities and colleges will offer courses of preparation in teaching partially seeing children during the 1961 summer session. The basic course follows the outline recommended by the National Society for the Prevention of Blindness in cooperation with its national advisory Committee on Education of Partially Seeing Children as the minimum essential preparation. The full sequence of courses provides the requirements for certification in most states. All courses offer graduate credit.

In addition to preparing the special teacher, the basic course is helpful to administrators and supervisors of these programs as well as to health personnel which have an essential part in identifying and supervising the health needs of the partially seeing.

The course includes medical lectures on the eye and eye hygiene, with opportunities for observation in eye clinics; discussion of organization and administration of services, emphasizing the three current types of programs; discussion of procedures for conducting educational services at all grade levels, based on the educational, psychological, medical and social needs of the individual child. Demonstration facilities provide opportunity for observation and practice teaching.

These programs are known to the National Society, having been served by the Society in one or more of the following ways: through financial aid, participation of staff on a full or part-time basis, provision of pamphlets and films, scholarship funds.

Scholarships may be available from the Delta Gamma Foundation, 1820 Northwest Boulevard, Columbus 12, Ohio, and from local Lions Clubs. A limited number of National Society for the Prevention of Blindness scholarships, for both basic and advanced courses, are available through these colleges and universities which may also grant additional scholarships. Teachers interested are urged to write directly to these institutions for detailed information.

Basic Courses

Illinois State Normal University, June 19-August 11. Dr. Harold R. Phelps, director, division of special education, Normal, Illinois.

Los Angeles State College, June 19-July 29. Dr. F. E. Lord, head, department of special education, 5151 State College Drive, Los Angeles 32, California.

George Peabody College for Teachers, June 12-August 18. S. C. Ashcroft, acting coordinator, education for exceptional children, Nashville 5, Tennessee.

San Francisco State College, June 26-August 7. Miss Georgie Lee Abel, professor of education, 1600 Holloway Avenue, San Francisco 27, California.

Intersession. June 19-23. Workshop—The Administration of Programs for the Visually Handicapped (for administrators).

Syracuse University, July 5-August 11. Dr. William M. Cruickshank, director, education of exceptional children, School of Education, Syracuse 10, New York.

University of Minnesota, June 12-July 15. Jeanne R. Kenmore, department of educa-

tional psychology, Pattee Hall, 15A, Minneapolis 14.

University of Pittsburgh, June 26-August 4. Ruth D. Hawkins, coordinator, department of special education, Pittsburgh 13, Pa.

Wayne State University, June 26-August 4. Dr. John J. Lee, chairman, department of special education and vocational rehabilitation, College of Education, Detroit 2, Michigan.

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Advanced Courses

Illinois State Normal University. Recent Developments in Education of the Partially Seeing. July 17-28. Coordinator, Helen Gibbons, consultant in education, National Society for the Prevention of Blindness.

George Peabody College for Teachers. Advanced Workshop in Education of Partially Seeing Children. July 5-15. Coordinator, Helen Gibbons, consultant in education, National Society for the Prevention of Blindness.

PERIODIC VISION TESTS FOR NEW YORK DRIVERS

A bill that would require all motorists to furnish proof of adequate eyesight as a condition for renewal of a driver's license has been approved by the Senate of New York State. The measure, which would be effective October 1, 1963, is similar in purpose to bills that have failed to pass the legislature for the last two years.

The New York law now requires a person to pass an eye examination when first applying for a license, but it makes no provision for a further test unless a driver is involved in an accident.

The new bill would require an examination on original application and subsequently at three-year intervals.

It is reported that 600 persons who have become legally blind since they first obtained driving privileges still hold licenses in the state.

at SYRACUSE UNIVERSITY

COURSES

for Educators of Children with Impaired Vision

The following courses are offered in cooperation with the American Foundation for the Blind Inc., New York City:

Student Teaching with Blind Children

Principles and Methods of Teaching Braille

Introduction to the Education of Blind Children

Advanced Problems in the Education of Blind Children

The following courses are offered in cooperation with the National Society for the Prevention of Blindness, New York City:

Education of Partially Seeing Children, theory and practice

Educational Implications of Visual Impairments

SUMMER SESSION: July 5 - August 11, 1961

Write: William M. Cruickshank, 101 Special Education Building
Syracuse University, Syracuse 10, New York

VISION SCREENING IN SCHOOLS

Recommendations of the National Society for the Prevention of Blindness

These recommendations are based on the National Society's association with many vision screening projects throughout the country over an extended period. They have been reviewed by consultants with special knowledge and experience in this field.

THE ideal goal is a complete, competent, professional eye examination for every child annually before entering school and at stated strategic intervals during school life. Until this practice becomes universal, eye screening programs during preschool and school years are necessary to locate children who may be in need of care, so they can be directed toward adequate professional attention. Statistical studies show that 25 per cent of children of school age have some eye difficulty and are in need of professional care. Most learning is acquired through the sense of sight. If a pupil has poor vision, and this fact is not known, the difficulty affects his entire adjustment in school.

Vision screening is only one part of the well-rounded eye health program, which has three basic elements—direct health services, education of both parents and children, and provision of a healthful environment. The program includes screening and follow-up; carefully planned policies and education in prevention of eye accidents; a comfortable and healthful visual environment in which lighting is adequate in quantity and in quality; medically approved first aid procedures; and special educational facil-

ties and teaching services for children who have limited vision.

Eye health should be an integral part of the over-all school health program. The eyes, of course, are a part of the whole child and whatever adversely affects his general health may affect his eyes; indeed the eyes have been called the most delicate reflectors of the health status. Advantage should be taken of vision screening in teaching eye health. When screening is related to classroom activity it becomes more meaningful for both children and parents and results in better follow-up.

Screening Not Diagnostic

Vision screening should not be considered diagnostic. Only certain visual skills are tested; and the teacher's close observation is also necessary in order to detect symptoms of eye trouble. If the pupil's visual ability does not reach a "passing" range of established criteria, or if the child shows certain symptoms, the need for a professional eye examination is indicated and he is then referred. We cannot expect to locate through screening every child who needs eye care, nor will every child so referred need glasses or treatment.

Screening, as the term implies, only sorts out or separates those children who possibly may have eye abnormalities. It will not find every eye defect.

Inasmuch as there are great differences of opinion as to which test should be used in a school screening procedure, the decision as to method should rest with local professional people. These are the school administrator, school physician, school nurse, health educator, and the eye care practitioners who might examine the referred children. It is particularly important that ophthalmologists be consulted, in relation to medical aspects of the program. They undoubtedly will take an active interest. In areas where there are no ophthalmologists it is desirable that state departments of health and education and county medical society be consulted.

Basic Minimum Procedure

The National Society for the Prevention of Blindness recommends as the basic minimum screening procedure for school children an annual test for distance visual acuity using the Snellen chart combined with teacher observation for symptoms that may be related to eye problems. Such continuous observation should be correlated with the screening procedure, regardless of what method is used. For example, if a child persistently exhibits symptoms or makes complaints that may indicate eye trouble he should have a competent eye examination even though his screening tests show no deviation from accepted limits. Periodic conferences of nurse and teacher are desirable so that there can be an exchange of information pertinent to the health of the child.

Authorities agree that a careful, painstaking test for central distance visual acuity is the most important single test of visual ability.¹ This identifies more children requiring eye care than any other single test.² Under proper conditions of illumination it tests the individual's ability to perceive form at 20 feet, which represents infinity in the test, since light rays are almost parallel as they enter the eye from 20 feet or further away. Form sense, or ability to perceive the shape of objects, has been called the essence of vision.³

The combination of teacher observation and the Snellen test has been found in several research studies to have a high correlation with clinical findings by ophthalmologists.^{4, 5, 6, 7} This method is inexpensive, requires little time per pupil, and is easy to administer. A practical criterion for referral with this test has been found to be vision of 20/40 or less for kindergarten through the third grade. The designation of 20/40 or less means inability to identify accurately letters or symbols on the 30-foot line of the test chart at a distance of 20 feet. A practical criterion for referral of children in the fourth grade and above has been found to be vision of 20/30 or less. This means inability to identify accurately letters or symbols on the 25-or 20-foot line of the chart.

Additional Tests

Two additional tests may be added to this basic minimum procedure if school administrators believe it advisable.

Accommodative Ability. To determine a pupil's ability to accommodate for close work his vision is checked while he is wearing a pair of convex or plus

lenses. The lenses (mounted in an inexpensive plastic or metal frame) should be of +2.25 diopter strength for the first three grades; +1.75 for the fourth grade and above. The ability to see the 20-foot line at 20 feet from the chart with either eye while wearing these lenses constitutes failure for this test; for it assumes that the child probably has as much hyperopia as represented by the lens, or more. Referral is therefore indicated.

It is sometimes urged that a visual acuity near-point test with cards held at 14 or 16 inches from the eyes be included in school vision screening procedures, because so much reading is required of children in school. However, most authorities agree that the plus lens test for distance is a more reliable indication of the student's ability to accommodate for near-vision tasks. The reason for this is that most children have such a high reserve of accommodative ability that even those with a marked hyperopia may be able to focus on a near-vision test card for the few minutes that the test requires.

If a test for hyperopia is considered desirable the National Society recommends, first, the plus lens distance vision test. The near-vision test with cards held at 14 or 16 inches is not recommended as a routine procedure.

Muscle Balance. In testing muscle balance, ability of the two eyes to work together, instruments or devices are used which cause fusion to be dissociated or frustrated, and hence show up imbalance. Fusion may be dissociated with a type of lens known as a Maddox rod, by use of a stereoscope in some form, or by use of color. The object is to present a different image to each eye at the same time. The re-

lationship of the two images as seen by the child can be estimated. This measurement is commonly done not only for a distant object but also for a near object.

The unit of measurement in this test is a prism diopter. The usual criteria for referral for the muscle balance test for outward lateral deviation (exophoria or exotropia) are: more than four prism diopters for a 20-foot distance and eight prism diopters for a near object.

All such measurements are in the straight-ahead position of the eyes. Occasionally, the eyes may deviate inward (esophoria or esotropia). The criterion for referral for inward deviation is six prism diopters for either distant or near objects. Rarely is a vertical deviation found. If this is greater than one and a quarter prism diopters, a referral for more complete eye examination is needed.

Conditions for Snellen Testing

A quiet area should be selected for testing distance visual acuity with the Snellen chart. The chart should be placed on a light, uncluttered wall in which there are no windows (unless all light is shut out). It should be fastened securely so that the 30-foot line is on the eye level of the average child to be screened.

The recommended illumination on the chart is 10 to 30 foot-candles. Shadows and glare in the field of vision should be eliminated. The general illumination in the room should be not less than one-fifth the amount of illumination on the chart.

Care should be taken in measuring the distance of 20 feet from the chart and marking this exact spot where the child is to stand.

Screening Instruments

The three tests described (visual acuity, plus lens, and muscle balance) have come to be known in battery form as the Massachusetts Vision Test. This was first developed in 1938 by the Massachusetts Department of Public Health.⁸ Several companies have produced testing instruments embodying this battery that are now available. (See references.)

Before any of this equipment is purchased for a school system those responsible for the vision screening program, particularly the school physician and the eye care specialists, should be familiar with the criteria to be used for referral as well as the mechanism of the instrument. Modifications of certain instruments can sometimes be ordered from the manufacturer.

Controversial Factors

Whether tests in addition to the Snellen test plus teacher observation are desirable in the visual screening program has been a controversial question. The answer depends on several factors. The accuracy of performance must be considered. Inexperienced technicians may interpret the test results inaccurately. Certain devices tend to cause needless referrals, based upon wrong conclusions. When a child is needlessly referred his parents may be required to spend money uselessly and (of great importance) may judge the entire screening program as questionable. On the other hand, children who need eye care should not be overlooked.

Adding to the testing procedure will locate a few more children in need of eye care but will at the same time cause more needless referrals.

To insure adequate facilities for examination a careful study of community resources needs to be made before reaching a decision. As a statement of general application, the additional tests are usually not done unless records show that from 85 to 90 per cent of children previously referred through Snellen testing coupled with teacher observation have received professional eye examinations. The reason for this may be understood after reviewing the results of two careful studies of vision screening methods.

In an Oregon study in which the Massachusetts Vision Test was used,⁹ it was found that referrals from Part I (Snellen test) constituted 61 per cent of the total referrals; Part II (plus lens test) 13 per cent; Part III (muscle balance test) 26 per cent. Referrals from Part I were 82 per cent correct, that is, needed professional eye attention, while those from Part II were only 63 per cent correct; and from Part III, 64 per cent correct.

The largest, most carefully planned study, with competent controls, of various methods of screening school children, was done in St. Louis.¹⁰ When a well-qualified technician tested 609 sixth grade students with the Massachusetts Vision Test battery, there were 185 referrals: 54 per cent from Part I; 31 per cent from Part II; and 15 per cent from Part III. Referrals from Part I were 86 per cent correct, from Part II only 40 per cent correct; and from Part III only 41 per cent correct.

In both these studies Part I (Snellen test) not only referred the greatest number of children but also resulted in the highest percentage of correct referrals.

It is not advisable to substitute for annual testing with the Snellen chart a more time-consuming battery test that is given less frequently. Nor does it seem advisable to use the complete battery if so much time is spent in the mechanics of screening that as a consequence follow-up is neglected. The requirement of a longer time for doing each test, plus the additional experience needed in order to conduct the battery tests, has sometimes resulted in fewer children receiving professional attention. The goal of screening is to obtain adequate, competent care for as many children as possible who need it.

Gradual Start Recommended

When the Massachusetts Vision Test battery is introduced it is sometimes practical to start gradually. The plus-lens test may be omitted at first, then added after determination of distance acuity plus teacher observation. Later the test for muscle balance can be added. The complete Massachusetts Vision Test might be used every two or three years with Snellen distance testing and teacher observation done annually in the other years.

When a program is initiated and agreement has not been reached among eye-care practitioners as to the types of tests to be used or the criteria for passing, it is better to limit the vision screening to the Snellen test combined with teacher observation and to lean toward coarser criteria for the division point. For example, children might be referred who have visual acuity of 20/40 or less instead of 20/30. This procedure will not locate as many children who need eye care but it will produce fewer un-

necessary referrals and less disagreement among parents and examining doctors. It will help to build up confidence in the program from the beginning. Later, criteria for referral may be raised, using 20/30 instead of 20/40 for passing, and the Massachusetts Vision Test battery may gradually be scheduled as suggested above for all children above the first grade, as soon as agreement is achieved.

Those who do not pass established criteria should have the test repeated on another day. This will do much to reduce over-referrals, that is, the referral of children who, the doctor finds, do not need correction or treatment.

It is recommended that the vision of children who wear glasses be tested annually, both without and with glasses. This offers the tester an opportunity to give instructions concerning the care of glasses and to observe whether they fit properly. In the follow-up for children who wear glasses determination of the need for a referral should be based on visual acuity without and with glasses, date of the last correction, date for the next examination and observations of both parent and teacher. Sometimes contact lenses are worn in the later adolescent years; they are rarely indicated for younger pupils. Vision should be tested both without and with contact lenses, and notation made as to the pupils' reaction to them.

All children who are having reading difficulties, who are experiencing scholastic failure, who are suspected of being mentally retarded, and those who have cerebral palsy should have thorough, professional eye examina-

tions included in their physical, mental, and emotional evaluation. No vision screening procedure, regardless of how complicated or expensive, can be a substitute for a complete professional eye examination.

Tests for Color Discrimination

It is recommended that a test for color discrimination be given each child at least once during his school life. Deficiency in this visual function is not correctible, and it is important for students and parents to be aware of any such condition. Vocational counselors should also be advised because the main purpose of this testing is to prevent the student who has difficulty in color discrimination from choosing a vocation for which he is not suited.

Schools often administer such tests at the sixth or seventh grade level. Sets of pseudoisochromatic plates, put together in book form, are recommended.¹¹ Two such tests which have proved satisfactory for school use are the Hardy-Rand-Rittler Test (American Optical Company, Southbridge, Massachusetts) and the Ishihara Test (Takamine Overseas Corporation, 10 East 40th Street, New York City). Unless tests for color discrimination are given under correct illumination, the results are not reliable. The Source C Macbeth Easel Lamp is the only available lamp giving proper illumination. This may be purchased from the Macbeth Daylighting Corporation, Newburgh, N.Y., or the American Optical Company.

Instruction in Screening Technique

It has been found that nurses, teachers, or technicians who are carefully prepared can screen with

equally reliable results.¹⁰ In many school systems well-selected volunteers who have received careful training carry out the procedure with meticulous and praiseworthy skill. Adequate preparation and a thorough understanding of the tests are needed by all persons who conduct them.

Due attention must be given to the qualifications of the individual who instructs in the technique of screening. On the basis of observation of many programs with which the National Society has been associated it is recommended that persons charged with this instruction should have the following qualifications: (1) supervisory experience in a successful ongoing program; (2) possession of basic information as to methods and objectives of vision screening; (3) have demonstrated an ability to teach others; (4) have demonstrated a capacity to work well with people, and especially with children.

In many communities vision screening in schools is done by a public health nurse or school nurse although it has not been found necessary to confine this work definitely to professional people. Individuals who meet the qualifications listed, whose integrity and dependability are recognized by those with whom they work, have carried on the screening successfully. In fact, they may be able to give more time to such a program, thus insuring its continuity.

When teachers or volunteers do the screening, the school nurse can devote her attention to coordinating all the services and interpreting the program to parents, teachers and other professional people in the community. The nurse may screen certain selected children. She usually makes the refer-

rals and does the follow-up to make sure that the children are examined. She may interpret the doctor's findings to the teacher and principal and counsel parents as needed.

Content of Course

A minimum of six hours of instruction is recommended for trainees in addition to supervised screening of children. Supervision should be continued until the trainer feels certain that the trainee has full comprehension of the total procedure and is able calmly and satisfactorily to elicit the best possible responses from the child. It is recommended that the subject matter include:

Growth and development of visual skills in children.

Anatomical structure of the eye and how we see.

Symptoms of eye trouble in children.

Differences in formalized eye training of the ophthalmologist, the optometrist, the optician, and the orthoptist.

Care of glasses and how they should fit (frames of children's glasses are sometimes badly bent, or broken).

Philosophy of vision screening and how to gain cooperation of the child under test; how to encourage younger children.

Demonstration of vision screening technique and practice in the method.

Procedure in making referrals.

Role of the volunteer vision screener as a member of the team in the total health program of the community.

Eye Health Committee

In schools responsibility for the entire program may rest with the super-

intendent, the principal, or the school physician. It is recommended that an eye health committee be established, representing eye specialists, school health personnel and school administrators. Along with planning for all phases of the total eye health program this committee should make decisions as to methods of screening and how eye care can be provided for children whose parents cannot pay for it. The committee should review annually the percentage of children screened in the total school population; the percentage referred for eye care; the percentage followed-up; the percentage of referrals needing professional eye care as indicated in the doctors' reports, and, where at all possible, the percentage of the latter who actually obtain care and follow the counsel given. This information will be valuable in evaluating the entire program.

Parents' Understanding of Screening

It is recommended that neither ophthalmologists nor optometrists conduct vision screening tests for school children. Experience has shown that when screening is done by these practitioners parents may regard the procedure as an eye examination. At best the test screens or separates, and regardless of who does it some children who need eye care will be overlooked while some will be referred who do not need it. When parents do not understand the limitations of the screening and place reliance on it they may neglect to take a child for a thorough eye examination even when he complains about his eyes or when they themselves notice certain eye symptoms.

Community understanding of the purpose of screening is essential. A parent-teacher program on vision and

eye health, presented once a year, offers an opportunity for progress reports on such projects.

Four-to-Six Age Group

In screening preschool groups the same supervisory arrangements are needed, but they can be made according to the situation in the community. Often direct supervision of volunteers can be arranged through the appropriate public health nursing agency. Sometimes volunteers are found who have the necessary attributes for supervising other volunteer screeners. Volunteer trainees can be taught to evaluate their own work in terms of the reaction of the parents, the teachers, and those who examine the referred children. An advisory committee, preferably with an ophthalmologist as chairman should always be set up, and should periodically review results.

Every attempt should be made to locate children with possible amblyopia as early as possible. An early finding followed by competent eye care may prevent permanent loss of vision, particularly in all cases of suspected or actual muscle imbalance. Vision determination during the preschool period and in the kindergarten years is vitally important. The illiterate E chart characters are easily learned by most children past three years of age.

Summary of Recommendations

In summary, the National Society recommends as a basic screening procedure for all school children annual testing for distance visual acuity, using the Snellen chart combined with careful teacher observation for eye symptoms.

If the school is to accomplish desirable goals toward improving and maintaining visual acuity for each child there should be an intensive follow-up to insure that those referred actually received competent eye examinations. That, specifically, is the goal of screening.

The National Society for the Prevention of Blindness makes available to schools, upon request, consultant services and educational materials on eye health of children, including films and posters.

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Vision Testing Instruments

American Optical Company, Southbridge, Mass. School Vision Screening Test. Bausch and Lomb Optical Company, Rochester, N.Y. School Vision Test. Freund Brothers, Atlantic City, N.J. Atlantic City Vision Test. Good-Lite Company, Forest Park, Ill. The illuminated chart, the plus lenses, and the equipment for tests for muscle balance are produced separately. Keystone View Company, Meadville, Pa. New York School Vision Test. Titmus Optical Company, Petersburg, Va. School Vision Tester. Welch-Allyn Company, Skaneateles Falls, N.Y. Massachusetts Vision Test.

INSTRUMENT RECORDS EYE AND HEAD MOVEMENTS

The AMA News reports that an instrument has been developed at the Defense Research Medical Laboratories, Toronto which records on motion picture film the head and eye movements of an individual as he studies a particular scene. The device is mounted on a helmet worn by the subject. Although used chiefly in aviation medical research, it has applications in ophthalmology, neurology, and psychiatry. The instrument was developed by Drs. N. H. Mackworth and E. Llewellyn Thomas.

DEFINITIONS OF OPHTHALMOLOGIST, OPTOMETRIST, OPTICIAN

The following definitions were adopted by the Executive Committee of the National Society for the Prevention of Blindness at its meeting on February 16, 1961:

An *ophthalmologist (oculist)* is a Doctor of Medicine (M.D.) who, while licensed to practice all branches of medicine and surgery, has specialized in the examination of the eye and its related structures and in the prevention, diagnosis, and treatment (medical and surgical) of their defects and diseases, prescribing whatever is required, including eyeglasses. His education and training qualify him to relate findings observed in an examination of the eye to those diseases in other parts and systems of the body which may have an effect on the eye.

An *optometrist* is one whose education, training and licensure qualify him to examine eyes, without the use of drugs, for abnormal visual problems not due to disease. He may prescribe, fit and supply eyeglasses and provide visual training for such conditions. If his examination leads him to suspect a defect or disease requiring medical or surgical treatment he will refer the patient to a qualified physician or surgeon.

A prescription *optician* is a skilled technician who is qualified to grind lenses, fit and dispense eyeglasses.

POST-GRADUATE COURSES IN OPHTHALMOLOGY

The fourth series of Post - Graduate Courses for Specialists in Ophthalmology will be given September 14-November 15, 1961 at the Institute of Ophthalmology of the Americas, N. Y. Eye and Ear Infirmary.

The content of the course represents a wide range of subjects relating to recent advances in research and treatment.

For catalogue and additional information write Mrs. Tamar Weber, registrar of the Institute, 218 Second Avenue, New York 3.

NOTES AND COMMENT

• Grant for Glaucoma Studies

A grant of \$18,689 has been made to the Yale School of Medicine by the Connecticut Lions Eye Research Foundation in support of basic investigations on glaucoma this past year. The grant is the second given to Yale by the Foundation in the past three years.

The money contributed is used to support work of the glaucoma research laboratory and of the department of anatomy at Yale. Research in the laboratory has been directed towards development of more accurate methods for determining intraocular pressure to facilitate early diagnosis of glaucoma and to study the changes which occur during the course of the disease. In the department of anatomy research of a more basic nature is concerned with the development of the structural and optical properties of the cornea.

• Motorists' Vision Survey

An interesting report of a survey of motorists' vision requirements appeared in *Traffic Safety* for September 1960. The survey was conducted to determine the type of tests and the passing standards that are required by the various states, the requirements for issuance of an original license and for its renewal, and whether any program exists for re-examining the vision of accident repeaters or those in certain age groups.

Richard P. Crinigan, Jr. reports that questionnaires were sent to the chairman of the committee on motorists' vision and highway safety of the affiliated state associations and the

District of Columbia. In the 39 responding states some test of vision is required before issuance of an original license.

The vision tests given vary from a simple test of visual acuity on a wall chart to instrument tests that measure phorias, stereopsis and visual fields. The requirements range from 20/25 to 20/70; the most commonly required passing standard is 20/40.

Eighteen states test color perception primarily so that the applicant can be warned to make allowances for this defect when it exists. Depth perception tests, usually in the form of instrument stereopsis tests, are required in 14 states. Four states test lateral and/or vertical phorias; three test fusion.

There is a wide variation of requirements for re-testing vision for license renewal. Some states make no provision and others report a regular program. Eleven states make a distinction between various age groups. The greatest agreement on re-testing seems to be in relation to accident repeaters. Twenty-five states require them to be re-tested; several others make it optional.

The standards required for passing on re-test are generally the same as those required by the state for an original applicant. However, a few states have different requirements for accident repeaters.

As a result of this survey it was suggested that efforts be continued to upgrade the vision standards; that greater efforts be made toward establishing uniform requirements throughout the country; that the states do re-

search on vision testing under night-time conditions.

• Eye Banks Impeded

The laws of most states are not geared to the development of eye banks, J. Harry King, M.D., Georgetown University ophthalmologist, reported at the AMA Clinical Meeting.

The written permission of next of kin is usually required before the deceased's eyes can be removed. Often this cannot be accomplished in time to make use of them. Other eyes are lost because the intentions of the deceased are unknown until his will is probated.

A recently passed New York law makes the deceased's pledge legal permission for removal of his eyes.

Dr. King added that eye banks urgently need the help of physicians in encouraging eye donations.

• Kansas Glaucoma Clinic

A total of 1,674 persons were examined at the Sumner County glaucoma detection clinic conducted at Wellington, Kansas last December.

The Observer reported in January that four volunteer ophthalmologists did the testing. Follow-up results were not complete at that time, but 11 of the 31 suspected cases have been diagnosed as glaucoma.

In addition to the physicians, hundreds of local volunteers aided in promoting and conducting the clinic which was well-organized and advertised.

• High School Tests

Visual acuity tests were administered to 3,252 students at Cathedral High School and five branch schools in New York City during 1959-1960, according to the annual report of

Cathedral's health service department. The tests revealed 1,160 students (36 per cent) with eye defects. Of these 1,146 (99 per cent) were corrected.

The group test was used as a primary screening and where indicated was followed by individual Massachusetts or Snellen tests. Students with 20/40 or less in either or both eyes were referred to a private ophthalmologist or to one of the many eye clinics in the city.

• NSPB Joins Council

The National Society for the Prevention of Blindness has joined the Council of National Organizations for Children and Youth. The Council is a participating unit in the activities related to the 1960 White House Conference and sponsors the newly organized National Committee for Children and Youth.

The aims of the Council are to stimulate the cooperation and participation of national voluntary organizations in putting into action the forum recommendations of the 1960 White House Conference; to review and evaluate the activities of its members in followup; and to make available the knowledge, experience and appropriate resources of national voluntary organizations to the next conference which is being planned for 1970.

WISE OWLS NUMBER 20,000

More than 20,000 industrial workers, men and women, have been enrolled in the Wise Owl Club sponsored nationally by NSPB. Eye protection, conscientiously worn, has saved the sight of these club members when they were involved in plant accidents.

AROUND THE WORLD

GREAT BRITAIN

Acuity of Young Men. Visual examinations of 1,033 young men recruited for national service revealed that 70 per cent had unaided vision of 6/6 or better, while 6/7.5 vision was found in another 12 to 14 per cent. Therefore, the *British Medical Journal* of May 7, 1960 reports, 80 per cent of the young men in the general population may be regarded as having full vision unaided by glasses.

Astigmatism was present in about 60 per cent of the cases. A little less than 20 per cent had it in excess of 0.5 D. In the group 41 (four per cent) had squint, and 0.5 per cent had severe amblyopia ex anopsia. The small series of cases suggest that one in every 200 loses useful vision in one eye from squint.

From the available data it can be concluded that at least 15 per cent and possibly 25-30 per cent of the male population require optical attention during early adult life.

This report was made by Arnold Sorsby, M.D. of the Royal Eye Hospital, London and three associates.

Fruits of Violence. *The New Beacon* reports that Professor Arnold Sorsby, research professor in ophthalmology at the Royal College of Surgeons, and Royal Eye Hospital, London, agrees with Mr. John Cogan, an ophthalmic surgeon, that there is a connection between violence shown on the screen and the number of accidents to children's eyes.

Mr. Cogan made the astonishing statement that after a recent showing

of a film in the district, three children had lost their sight "because of acts of violence depicted in the film, and copied by the children."

Vision in Industry. According to the British Safety Council the visual acuity of over 40 per cent of industrial workers in Britain is so poor that it greatly reduces their efficiency. *The Journal of the American Medical Association* reports that the Council and the North London Association of Ophthalmic Opticians are calling a conference to investigate the possibilities of improving visual efficiency in industry.

A survey of 300 workers in the jewelry trade revealed that nearly 30 per cent of those between the ages of 21 and 30 were visually defective, and in the age group 51 to 60 the figure was over 70 per cent. The average for all ages was 40 per cent. The Council pointed out that as eye fatigue increased production fell off and accident proneness rose. Many accidents, from cuts and bruises to deaths, resulted from the incorrect reading of instruments and the misjudging of distances.

The need for testing both distance and near vision of workers is cited.

PHILIPPINES

First Far East Graduate Course in Ophthalmology. The First Far East Graduate Course in Ophthalmology was held in Manila early this year under sponsorship of the Ophthalmological Society of the Philippines and the Philippine Ophthalmological and Otolaryngological Society. Valuable co-operation in planning and administer-

ing the program was given by Dr. Elpidio Valencia, secretary of health of the Philippines, and Major General O. K. Niess, surgeon general of the U.S. Air Force.

Patterned after graduate courses held abroad, the sessions began on January 16 with an enrolment of 80, and extended for four weeks. In addition to the lectures there were audio-visual presentations in color, featuring the latest surgical procedures; clinical demonstrations; panel discussions and closed circuit TV surgical demonstrations. Dr. Herminio Velarde, Jr. served as executive committee chairman and Dr. Edgardo T. Caparas as executive secretary of the course.

Dr. Brittain F. Payne, one of the lecturers from the United States, reports that some 200 local and foreign eye physicians, and an equal number of health authorities, as well as national and city officials attended the opening ceremonies, at which Dr. Sabino Santos presided.

In his opening address Dr. Valencia characterized the course as "a step forward in upgrading standards of medical care of the eyes in this part of the world."

"We are grateful," he said, "for the benevolent and active cooperation of the United States Air Force through Major General O. K. Niess who has made this course possible, and to the Philippine Ophthalmological and Otolaryngological Society and the Ophthalmological Society of the Philippines for their efforts to pursue this plan into reality. To the guest lecturers, we extend our warm greetings and heartfelt appreciation; and to the participants we express our welcome and best wishes for a fruitful course.

"The consequences of this course should be far-reaching; should bring to the peoples of Asia the blessings of good, modern medicine by the goodwill of both lecturers and participants."

President Carlos P. Garcia sent a message conveying his warmest greetings to the participants, and stating, in part: "Their presence in Manila to familiarize themselves with the latest developments in their field of specialization is indeed heartily welcomed by their professional colleagues in this country. I trust that their one-month stay here will be very fruitful as I also assure them of the policy of my administration to give due emphasis and encouragement to medical research. This postgraduate course, therefore, is an endeavor which we earnestly hope to succeed."

The visiting lecturers from the United States were:

Brittain F. Payne, M.D., executive ophthalmic surgeon, New York Eye and Ear Infirmary, and clinical professor of ophthalmology, New York University; Paul Chandler, M.D., associate clinical professor of ophthalmology, Harvard Medical School and professor emeritus, Massachusetts Eye and Ear Hospital; Gerald B. Kara, M.D., surgeon, director of research in ophthalmology, New York Eye and Ear Infirmary; Arthur Linksz, M.D., associate clinical professor of ophthalmology, New York University and consultant, Manhattan Eye and Ear Hospital; and P. R. McDonald, M.D., associate professor of ophthalmology, University of Pennsylvania Graduate School of Medicine.

Exhibits of the latest products of various drug manufacturing and importing companies, were featured during the conference.

CURRENT ARTICLES

Decreased Aqueous Outflow in Rabbits with Hereditary Buphthalmia. P. R. B. McMaster. *A.M.A. Archives of Ophthalmology.* Vol. 64, p. 388. September 1960.

The facility of fluid outflow from the anterior chambers of 10 buphthalmic rabbit eyes was found to be less than that obtained in the eyes of 10 normal rabbits. Histologically an obstruction appeared to be at the angle of the eye. The defect corresponds to the condition found in primary glaucoma.

It has been previously shown that the disease is hereditary in certain rabbits. That it may be hereditary in the stock used in this experiment is suggested by the appearance of the disease in four of the seven offspring resulting from the mating of two buphthalmic rabbits. Although it is possible that the disease resulted from an infection, no evidence of one was found.

Schiøtz Tonometer Calibration and Applanation Tonometry. M. F. Armaly. *A.M.A. Archives of Ophthalmology.* Vol. 64, p. 426. September 1960.

The difference in the estimate of intraocular pressure in the individual eye when obtained by two methods of measurement, applanation tonometry and Schiøtz tonometry using the 5.5 gm. plunger load and the 1955 calibration, was investigated in 1,072 normal eyes.

The results were analyzed with respect to the agreement between applanation tonometry and the 1955 calibration, the effect of differences existing among certified Schiøtz to-

nometers, the relationship between the coefficient of ocular rigidity and pressure level, and the resulting error in clinical prediction.

Glaucoma Family Study. B. Becker, A. E. Kolker and F. D. Roth. *American Journal of Ophthalmology.* Vol. 50, p. 557. October 1960.

The results of a study of 110 close relatives of patients with chronic simple glaucoma were compared with the results of test procedures in the normal population. Six cases (5.5 per cent) of chronic simple glaucoma were diagnosed in the study group. If only the 62 people over the age of 40 are considered, the prevalence is 9.7 per cent, or about five times the incidence in the general population over that age.

The average values for the entire group for pressure and outflow facility were significantly different than for those for the normal population, the intraocular pressure being higher and facility of outflow lower.

Clinical Application of Gonioscopic Findings to Evaluation of Glaucoma Operations. F. Kandori and Y. Fujinaga. *American Journal of Ophthalmology.* Vol. 50, p. 631. October 1960.

Gonioscopy was used to evaluate the prognosis after a series of glaucoma operations.

The examinations showed that when the extent of a wide angle is restricted, or when it changes into a closed angle after operation, reoperation is necessary to open the angle at the earliest date so that the C value may be improved. It is emphasized

that gonioscopy and tonography are valuable in the clinical evaluation of glaucoma operations.

Second Glaucoma Survey of Allegheny County and Environs. J. C. Dunbar and M. C. Goldberg. *The Pennsylvania Medical Journal*. Vol. 63, p. 1802. December 1960.

A report of the first glaucoma screening in Allegheny County was published in the Spring 1959 issue of *Sight-Saving Review*. Undetected glaucoma was found in 1.8 per cent of the 21,197 persons screened.

The purposes of the second screening were to confirm the earlier findings, to evaluate the pattern, and to determine plans for the future.

The results indicate that 481 of the 6,546 persons screened had elevated tensions. Glaucoma was diagnosed in 142 of them, 2.1 per cent of the total number tested. Forty-six persons refused follow-up care.

The program uncovered 235 additional persons with fundus pathology requiring medical attention.

Intravenous Urea in the Treatment of Acute Angle-Closure Glaucoma. M. A. Galin, F. Aizawa, and J. M. McLean. *American Journal of Ophthalmology*. Vol. 50, p. 379. September 1960.

The variety of treatments recommended for the relief of acute angle-closure glaucoma attests to the inefficacy of therapy. In essence, reduction of intraocular pressure is the immediate need.

The case reports presented on the use of urea as an osmotic agent clarify the method of administration, usual dosage, and nature of response usually obtained. Urea may produce

sufficient hypotony to aid in the termination of the closure cycle or may be advantageous preoperatively in nonresponding cases.

A New Operation for Glaucoma. F. S. Peña. *British Journal of Ophthalmology*. Vol. 44, p. 626. October 1960.

A new surgical method applicable to glaucoma in its various forms is reported to offer the advantage of minimal trauma without cosmetic impairment of the eye. It aims at lowering the ocular tension by opening a new intra- and extra-ocular drainage channel and restoring the normal one.

The filtration bleb offers no problems because it is situated behind the limbus and is well protected by the upper lid. Secondary infection is improbable because the scleral opening is not coincident with the iridectomy.

The Incidence of Glaucoma in Diabetes Mellitus. J. R. Armstrong, R. K. Daily, H. L. Dobson and L. J. Girard. *American Journal of Ophthalmology*. Vol. 50, p. 55. July 1960.

The incidence of glaucoma in a group of 393 unselected diabetics was determined by using the standard Schiøtz tonometer as the major screening test. Glaucoma was established in 6.6 per cent of the patients. A control group of 280 out-patients was tested in a similar manner, revealing an incidence of 2.8 per cent glaucoma in the general population.

An over-all glaucoma incidence of 5.9 per cent was found by reviewing 844 charts from a diabetes clinic. A review of clinic charts for 325 glaucoma patients indicated that 12.6 per cent were diabetic. The diabetes was

diagnosed before glaucoma in a significant majority of patients.

Unsuspected diabetes was found in 5.7 per cent of 53 glaucoma patients tested for blood and urine sugar.

The results suggest that the incidence of glaucoma in diabetes is appreciably increased over that in the general population.

A Possible Aetiology for Glaucoma in Negroes. M. H. Luntz and R. Smith. *British Journal of Ophthalmology*. Vol. 44, p. 600. October 1960.

In four Negro patients with primary glaucoma a pathological degree of episcleral fibrosis was present which led to the surmise that this might be of etiological significance in glaucoma in this race. This could also be correlated with the poor results obtained after filtration operations for glaucoma in Negroes.

Retinal Vein Occlusion and Glaucoma. S. Vannas and A. Tarkkanen. *British Journal of Ophthalmology*. Vol. 44, p. 583. October 1960.

A 42 per cent incidence of simple glaucoma was found in a series of 71 patients with central retinal vein occlusion. Of those above 65 years of age, three patients out of four had simple glaucoma in both eyes in addition to the venous occlusion. Simple glaucoma in both eyes was found in six patients out of 58 with branch occlusion, an incidence of 10 per cent. Five cases of primary closed-angle glaucoma were diagnosed. Among the eleven patients with unilateral hemorrhagic glaucoma nine had simple glaucoma in the opposite eye.

The patients with central retinal vein occlusion treated with long-term anticoagulant therapy had a better

visual outcome than the untreated patients, and those with no evidence of glaucoma had a more favorable general prognosis.

Discovery of central vein occlusion or unilateral hemorrhagic glaucoma calls for exhaustive examination for primary glaucoma. This is most accurately done by the use of tonography in association with gonioscopy and the appropriate provocative tests.

Enzymatic Zonulolysis as an Aid in Cataract Surgery. P. J. Kennedy, J. S. Jordan, J. F. Morrison, R. D. Mulberger, and S. W. Boland. *A.M.A. Archives of Ophthalmology*. Vol. 64, p. 342. September 1960.

A preliminary report is presented concerning 432 patients whose cataracts were removed after instilling a-chymotrypsin in the posterior chamber. This was done in four hospitals by 10 different surgeons.

The enzyme facilitated intracapsular extraction and reduced trauma to the eye. The early results were uniformly good and careful use of a-chymotrypsin is encouraged.

This group of patients will be followed up and compared with a similar number of patients whose cataracts were removed before a-chymotrypsin was available.

Nursing Care of the Patient with a Cataract Extraction. L. Bosanko. *The American Journal of Nursing*. Vol. 60, p. 1435. October 1960.

The nursing staff can help the cataract patient overcome his ambivalent feelings about surgery during his hospital orientation. An explanation of pre- and postoperative procedures will enable him to cooperate

more fully during his convalescence.

The nurse's role in caring for the cataract patient is described.

Corneal Antigenicity. W. J. Geeraets, G. Chan and D. Guerry, III. *A.M.A. Archives of Ophthalmology*. Vol. 64, p. 413. September 1960.

The various corneal tissues were tested for their antigenicity and ability to participate in specific antigen-antibody reactions. Sixteen rabbits were used for the four specific immunizations and controls were carried out simultaneously with each experiment. The *in vitro* study was performed by means of immunoelectrophoresis and the agar diffusion technique.

A total number of 15 different precipitin-forming antigens were demonstrated and an attempt was made to classify the reaction patterns. Certain lines obtained in the agar precipitin tests were related to the different structures while others were nonspecific with regard to anatomical relations within the cornea.

The two major components of antigen-antibody reactions, with reference to the degree of precipitate formation, rapidly disappeared after corneal tissue was transplanted as a corneal graft into a recipient eye.

Posterior Subcapsular Cataracts Induced by Corticosteroids in Patients with Rheumatoid Arthritis. R.L. Black, R. B. Oglesby, L. von Sallmann and J. J. Bunim. *Journal of the American Medical Association*. Vol. 174, p. 166. Sept. 10, 1960.

Posterior subcapsular cataracts (PSC) occurred in 17 of 44 patients (39 per cent) with rheumatoid arthritis who received prolonged corti-

costeroid therapy. A correlation was found between the use of moderate or high maintenance dosage of corticosteroid preparations for longer than one year and the development of PSC. They were not observed in 19 control patients and in those who had received low maintenance dosage or hormonal therapy for less than one year. Incidence of PSC was appreciably higher in male than in female patients. Although conclusive diagnosis depends on slit lamp examination, opacities in 11 of the 17 patients were visible with an ophthalmoscope through the dilated pupil.

None of the reported patients had severe visual impairment or required surgery during the brief follow-up period. Six of the 17 patients with PSC had subjective visual complaints. Evidence of measurable but slight impairment of visual acuity was found in only 4 of the 17 patients.

Intractable Granuloma as a Complication of Polyethylene Tube Buckling Procedures. H.A. Lincoff. *A.M.A. Archives of Ophthalmology*. Vol. 64, p. 201. August 1960.

Intractable granuloma occurred in four eyes in which encircling tubes had been placed following retinal detachment surgery. In two cases a permanent cure was obtained by removal of the tube and in a third by sterilization of the tube. In the fourth case an attempt at sterilization was unsuccessful. The lumen of the tube was filled with a pure culture of *Staphylococcus aureus*.

Two factors appear necessary for the growth of a granuloma: dead space inaccessible to tissue fluid exchange, such as the lumen of a polyethylene tube, and bacterial con-

tamination. Bacteria are probably carried into the operative site as the tube and sutures pass over adjacent skin or through the brow or lashes. To combat this a more careful skin preparation is now required.

The face and particularly the brows are scrubbed with hexachlorophene. Lashes are clipped and the lash margins painted with ointment chloramphenicol 24 hours prior to surgery. The patient is placed on systemic chloramphenicol. The surgical drape is altered to limit the field to the orbital rim. After being sewn in place, the tube is filled with a thick suspension of chloramphenicol.

No granulomas have been reported since the adoption of these measures. The incidence had previously been three per cent in 145 consecutive operations.

The Collection, Storage and Selection of Human Vitreous. G. K. Edwards and J. C. Locke. *American Journal of Ophthalmology*. Vol. 50, p. 108. July 1960.

A technique is outlined for using human vitreous in retinal detachment surgery. A standardized approach in all phases of handling this material is emphasized to reduce the possibility of bacterial or chemical contamination.

Retinal Detachment Surgery: Scleral Shortening By Outfolding With Titanium Clips. R. Castroviejo. *Transactions American Academy of Ophthalmology and Otolaryngology*. Vol. 64, p. 472. July-August 1960.

This is a follow-up of the report on a new instrument presented before the American Academy of Ophthalmology and Otolaryngology in Chicago in 1955 with a brief summary of

the results obtained in 56 selected cases of retinal detachment.

The new procedure for scleral outfolding with titanium clips is recommended as having a prognosis as good or better than that offered by other methods.

Investigation of the Sources of Trachoma in the White School Population of Western Australia. I. Mann. *British Journal of Ophthalmology*. Vol. 44, p. 321. June 1960.

Since the beginning of the ophthalmological surveys of Western Australia six years ago many thousands of school children of all races have been examined and the incidence of trachoma in the general population, white and native together, has been found to be approximately 30 per cent. If persons with aboriginal blood alone are considered, the percentage rises to 58 per cent, as compared to approximately four per cent in the total white population.

The preliminary surveys have been completed and repeated local surveys show that trachoma in the white population is increasing. New cases are continually being found in children by the school medical officers, who now make a routine examination for trachoma in every child.

Some of the school findings were examined with the intention of discovering the source of infection, which was assumed to be by contact with non-white children. However, cases of trachoma were occurring in all-white schools among children in districts with no native population. The individual cases were then examined and their origins and contacts entered into. It was shown that an exogenous as well as the expected

endogenous source of infection of the white population exists.

Twelve schools with only white children and twelve with both white and aboriginal children were examined to find the sources of infection with trachoma in the white children.

Of 141 cases of trachoma in all-white schools 96 were in children of foreign origin and only 45 in Australians of British ancestry. In the mixed schools there were 105 cases in white children, of whom only 19 were foreign immigrants. Therefore, there are two probable sources of infection —one from native children, the other from migrants. However, in a few places trachoma is still endemic in a white population with neither native nor immigrant contacts.

There is a danger that increased immigration is introducing trachoma into areas without native contacts which were previously free of it.

Electroretinography in the Differential Diagnosis of Visual Loss in Children. G. Goodman and H. Rippes. *A.M.A. Archives of Ophthalmology*. Vol. 64, p. 221. August 1960.

The electroretinogram (ERG) is an objective test of retinal function which is particularly valuable in the clinical examination of children with visual loss. It is of great value in the differential diagnosis and prognosis of retinal anomalies, degenerations, atypical fundus pathology and visual loss with normal fundi. Subjective tests cannot be employed in early childhood, and diagnostic fundus lesions are frequently absent in the early stages of retinal degenerations and in many of the congenital retinal anomalies which account for subnormal vision. This method is also

important in the clinical examination of adult patients since it reflects retinal activity exclusively.

Electroretinographic examination is particularly important in the diagnosis of congenital tapetoretinal disorders and congenital cone blindness. Though both disorders are due to retinal abnormalities the absence of fundus lesions in many of these cases has led to frequent misdiagnoses and instances in which the amblyopia was mistakenly attributed to optic nerve or cerebral pathology.

Disease entities and individual cases are cited to demonstrate the use of the ERG in the differential diagnosis of visual loss in subnormal vision with normal fundi; subnormal vision with macular changes; night blindness with normal fundi; and night blindness with fundus alterations.

Prevalence of Ocular Anomalies Among School Children. A. Majima, A. Nakajima, H. Ichikawa and M. Watanabe. *American Journal of Ophthalmology*. Vol. 50, p. 139. July 1960.

An ophthalmic examination was performed on 3,033 Japanese school children from six to 10 years of age as part of a consanguinity study. This was an unbiased, unselected sample of the population at that age group. Children in a school for the blind were also examined to make sure that no bias was caused by their having to attend a special school.

The congenital anomalies observed were color vision defects, refractive errors, motor anomalies, and anomalies of the fundus, lens and other parts of the eye. The prevalence of motor defects suggested the need for an orthoptic school. A relation was found between myopia and growth

and sex; the prevalence and mean of myopia were higher in females than in males and increased from the third grade up.

The rate of consanguinity was eight per cent in the unselected group as compared with 22.6 per cent in the blind group.

Glare and Age. E. Wolf. *A.M.A. Archives of Ophthalmology*. Vol. 64, p. 502. October 1960.

The ability to recognize visual targets at different distances from a glare source was studied in 112 individuals ranging in age from five to 85 years. The luminance of the screen on which the targets were shown had to be increased in proportion to the glare luminance. This increase became progressively greater with age.

Comparing individuals in the youngest group (five to 15 years) and the oldest (75 to 85 years), a 50- to 70-fold increase in luminance of the target screen was needed for the latter group. At about 40 years of age a sudden acceleration in sensitivity to glare occurs.

Studies on patients with incipient and extracted cataracts suggest that the opacity of the lens and the resulting entopic scatter of light are the main causes of glare.

Active Immunization Against *Pseudomonas* Infection of the Cornea. J. W. McMeel, R. M. Wood and L. B. Senterfit. *Transactions American Academy of Ophthalmology and Otolaryngology*. Vol. 64, p. 490. July-August 1960.

An experimental study was undertaken to determine the degree of protection against infection obtainable by active immunization. The corneas of 16 rabbits were immunized with

Pseudomonas aeruginosa vaccine. Two weeks later they were challenged with the homologous organism, as were a group of seven normal animals.

Of the 32 eyes, 27 were completely protected, four showed moderate infection, and one showed severe infection. All 14 control eyes became severely infected.

Effect of Eye-Pads on Healing of Simple Corneal Abrasions. H. Jackson. *British Medical Journal*. No. 5200, p. 713. September 3, 1960.

At Manchester Royal Eye Hospital during a two-month period 157 patients suffering from superficial corneal abrasions, without complicating lesions, were studied. Eye-pads were applied to 77 patients, leaving 80 without padding.

There was no significant difference in the rate of healing of the two groups. Complications subsequent to healing occurred in the follow-up period in three patients in the padded series. It is therefore recommended that such simple abrasions be treated without a pad.

Eye Injuries Due to Power Lawn Mowers. D. Barsky. *A.M.A. Archives of Ophthalmology*. Vol. 64, p. 385. September 1960.

Five cases of eye injuries are reported to have resulted when power lawn mowers transformed bits of waste into dangerous missiles. In three cases vision was totally lost.

A review of 241 additional power mower injuries indicated that 39 or approximately 16 per cent affected the eye.

The need for safety features in the rotary type mower is stressed.

BOOKS AND PAMPHLETS

VISION OF THE AGING PATIENT. Monroe J. Hirsch, O.D., Ph.D. and Ralph E. Wick, O.D., Editors. Chilton Company, Philadelphia. 1960. 328 p. \$7.50.

In his introduction to this optometric symposium Dr. Henry W. Hofstetter gives some rather startling facts relating to the age trend in the United States. For example, from 1915 to the projected date of 1975 the number of persons over 65 will have increased four and a half times. The population from 45 to 64 years of age will have almost tripled, and the total population will have slightly more than doubled.

This trend involves more than an increase in birth rate. Life expectancy at birth at the beginning of the century approximated the present-day life expectancy of a 25-year-old adult.

It is estimated that by 1975 almost 10 per cent of the population will be 65 and over; and almost 30 per cent will be 45 and over.

Fifteen authors, all Fellows of the American Academy of Optometry, have contributed chapters to this volume. The anatomical, physiological and psychological changes associated with aging are reviewed to provide a background for detailed discussions of visual acuity, refractive and accommodative changes, and anomalies of the visual neuromuscular system. A brief review of the pathology of the eye in age is followed by a chapter on general pathological phenomena which can affect vision.

Other subjects that receive consideration are partial vision and optical aids; fitting spectacles; management

of the aging patient in optometric practice; contact lenses; social and vocational rehabilitation; economic aspects and old age assistance programs.

Dr. Wick emphasizes that patients past age 50 require a different approach in all phases of eye care. Additional visual measurements are necessary; the diagnostic significance of certain tests varies considerably; physical and mental changes must be considered.

It has been said that as a society we are virtually unprepared for the large percentage of aging people in our population. This text should prove to be an aid in recognizing and dealing with problems of vision that assume increasing importance in later life.

COMMUNICABLE AND INFECTIOUS DISEASES.

4th Edition. Franklin H. Top and collaborators. C. V. Mosby Company, St. Louis. 1960. 812 p. \$20.00.

In view of the many changes that have occurred, particularly in the field of the viral diseases, where several new groups of viruses have been discovered, a new edition of this well-known work, first published in 1941, is welcome. Twenty-two contributors have prepared new or revised chapters.

The book is intended as a text or handy reference for public health officials and all other persons concerned with communicable diseases or infestations. Its main sections present, first, general considerations applicable to this field; and, second, a classification of diseases by common portal of entry—the respiratory and gastrointestinal tracts, and the mucous membrane or skin.

Some of the common communicable diseases have changed little in occurrence or severity; others are now less common and are milder in manifestation, from both the individual and group points of view.

The book is well organized, and is profusely illustrated in color and black and white. The appendix provides a valuable tabulation of reportable infectious diseases in relation to contact and disinfection control. An extensive glossary is an aid in understanding the terms used in current literature.

SIGHT. A Handbook for Laymen. Roy O. Scholz, M.D. Doubleday and Company, New York. 1960. 166 p. \$3.50.

The author, who has been closely associated with Wilmer Ophthalmological Institute of Johns Hopkins Hospital for more than 20 years, and has a large private practice, has written this compact book "to help answer the many intelligent questions patients ask their eye doctors." It is not intended as an aid to diagnosis, but rather to enable the layman, at his leisure, to gain a broad non-technical view of the functioning of the eye in health and disease.

The factual information is presented clearly and simply; many popular misconceptions or misunderstandings are explained. The extensive use of diagrams aids comprehension of some of the more intricate problems in optics and eye physiology.

Included are discussions of the psychological factors of partial blindness; early diagnosis of eye trouble in children; glaucoma; cataracts; contact lenses; and new optical aids.

The handbook will be useful not only to patients with eye problems,

but to their families; to teachers, employers, public health officers and nurses.

THE HEALTH OF PEOPLE WHO WORK. Albert Q. Maisel, Editor. National Health Council, New York. 1960. 268 p. \$4.50.

The 1959 National Health Forum brought together for the first time the nation's foremost authorities in every phase of occupational health. Reports were presented by more than 200 industrial medical directors, physicians, nurses, management officials, public health officers, officials of voluntary health agencies and other experts in this field. Based on these reports, this book represents a collective viewpoint in which the more than 500 Forum participants share.

Today occupational health services—varying from extensive to rudimentary—are said to exist in a majority of the 8,000 plants employing more than 500 workers each. However, of the three million small business establishments with fewer than 500 workers, representing approximately two-thirds of the entire labor force, only a few are found to have in-plant services that go beyond the most elementary provisions for first-aid. Dr. Harold J. Magnuson, chief of the occupational health program of the U.S. Public Health Service, informed the Forum that "less than one out of ten of all employees are estimated to have preventive health services available to them through industry."

Among the subjects of the Forum discussions are the special occupational health problems of the small plant; the working and the living environments; placement of workers in relation to their physical and mental

capacities; health education; preparation for retirement; finding manpower and cooperation for the occupational health program; and occupational medicine's relation to health insurance and fringe benefit programs.

The central idea of the participants' discussions was expressed by Dr. James H. Sterner, chairman of the Forum Committee and medical director of the Eastman Kodak Company. "There is increasing recognition," he declared, "of the importance of health to our economic well-being. But, at the same time, new threats to health, physical and mental, are to be found in new products, new forms of energy, and new patterns of production and distribution.

"To apply our increasing knowledge of preventive medicine to improve the health of people who work, and to help meet the threats to our productive working force, are the tasks of occupational health. These tasks, for too long, have been almost the sole concern of the industrial physician, hygienist, and nurse. New colleagues are needed—colleagues from management, labor, the health professions, and the voluntary and public health agencies—if we are to make the kind of progress now attainable in occupational health.

"We now recognize that even if we were to achieve the highest possible degree of health protection in the plant setting, we would still suffer serious losses because the health of the worker is affected by what happens—or fails to happen—in the home or in the community. Furthermore, it is clear that community health and welfare services can be utilized—and for small plants, particularly, *must* be utilized—if we are to have comprehen-

sive occupational health services. This calls for a sharing of the problem—of our mutual experiences—and of our ideas for improvement among all who have a stake in the health of people who work."

The role of the voluntary agencies in this field was emphasized by Marie Goulett, executive director of the Health Association of Rochester and Monroe County, New York.

"Voluntary agencies," she said, "have been able to bridge the gap between the community and industry because industry regards them as impartial groups devoted to raising the level of health in the entire community. Furthermore, most industrial firms have financially supported our general programs and management people have often served on our governing boards or on various of our committees. Thus industry has generally been willing to welcome most contributions to in-plant health education which we have proposed."

Such reports emphasize the opportunities afforded to prevention of blindness agencies to contribute to these health programs. The Wise Owl Club, sponsored by the National Society in the interest of industrial eye safety, is an outstanding example of effective cooperation.

The follow-up work on the National Health Forum will stimulate more attention to these programs in communities, and it is important to see that eye health and safety are included.

ANNUAL CONFERENCE NUMBER

The Summer issue of *Sight Saving Review* will feature the proceedings of the National Society's Annual Conference, held at the Barbizon-Plaza Hotel, New York City, April 12-14, 1961.

OPHTHALMOLOGY

SECTION XII

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